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VIEW FROM SOUTH-EAST.
INTERIOR VIEW, LOOKING EAST.
MR. WALTER TAPPER, F.R.I.B.A., ARCHITECT.

ST. ANDREW'S HOSPITAL, DOLLIS-HILL, WILLESDEN, N.W.:—
FRONT ELEVATION AND PLANS.
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THE ARCHITECT AND THE LAY-COMMITTEE.

WE believe that it is a generally acknowledged fact amongst architects that, although the practice of their art is beset with all manner of difficulties, it is not so much the actual carrying through of work entrusted to them that taxes their resources as the ways and means to which they have to resort, on occasion, in order to make sure of the commission. In other words, the architect's great difficulty is to secure work, and, having achieved this with no stain upon his reputation, to safeguard his interests from the day the contract is signed to that of the final settlement of accounts, his own amongst the number.

We are well aware that the mere enumeration of these two axioms will awaken memories in the mind of many an architect of injury inflicted upon him, it may be years ago, for this is nothing new, or it may be yesterday, for it is going on every day. That such a state of affairs is to be entirely avoided is beyond our wildest expectations, but we fear that it will be aggravated unless serious and concentrated effort is brought to bear upon it from outside the ranks of the profession as much as from within. There is probably not an architect in this country who has been in practice on his own account for a period of ten years who could not tell of experiences which would be illuminating; of prospective and presumably assured clients lured away at the psychological moment; of intrigue of some kind or another which was too much for him because he would not stoop to combat it; of clients who have protested against the final certificate, whereas the "extras" were entirely of their own ordering or necessitated by their vacillating minds; while stories of injustice suffered in the thousand-and-one directions that may result from a competition conducted on satisfactory lines are too rife for us to attempt to touch upon them here, even if we felt inclined to do so, in view of the fact that real progress has been made in recent years towards the elimination of the "undesirable competition." But, although architects may have differences with their clients at one stage or another of their business relations, they often have themselves to blame, for the simple reason that they do not know how to manage them; it is often indeed a delicate proceeding, and, as practically no instruction or guidance is given in the architectural schools or meted out by the practitioner to his pupil, the young architect often finds himself checked in the game of life till he has learned by bitter experience; again, the architect may have grievances associated with this or that competition, but if that is so now-a-days he more often than not has himself to blame for entering upon one the conditions of which have not been approved by the Committee of the Royal Institute of British Architects, whose special duty it is to watch and report on such matters.

But the architect who finds himself face to face with a Lay-Committee is in an altogether different position, and we wish in particular to draw attention here to some of the indignities to which he may find himself subjected under trying

conditions. It is a theme to which attention appears to have been little directed, certainly not for lack of data.

Let us take the case of a Committee composed of a number of men and, in these enlightened days, in all probability comprising an equal or possibly a preponderating number of women, all cultured as far as general knowledge constitutes culture, but ignorant of architecture and the methods of the men who keep the lamp of beauty bright. Imagine such a Committee taking upon itself the onerous duty of formulating a scheme for a large modern building intended to be put to a variety of uses : of selecting a site for it, and of appointing an architect to design and carry it out. At a very early stage of its labours it finds that it cannot proceed far without some expert aid, for beyond a vague idea of the nature of the accommodation required to be provided little is known. Questions quickly arise as to how many floors should this accommodation be disposed upon, and how much land will be required. If half an acre, will every square yard allowed to be built upon by the by-laws in force in that particular district be covered ? If double that area, will the building be lost on a site too large for it ? Till some plans, however rough, have been prepared to scale no site can be acquired. Accordingly the services of an architect are retained, and as one site is favoured after another he surveys, and by means of report and plan provides the Committee with valuable information, valuable possibly in a negative sense as proving more often than not that certain steps should not be taken. For these services he receives nominal fees out of all proportion to the labour and skill expended, and he may then find that the Lay-Committee has reserved the right to appoint any architect and on a given day to invite applications for a specific commission. We believe that it is no uncommon thing for such a course as we have outlined to be followed, and we cannot take exception to the proceedings so far, either in theory or practice, for " who pays the piper calls the tune." But we do regret the custom which seems to be prevalent amongst architects of pouring in drawings and photographs of executed work to impress the lay-mind with the magnitude of their achievements, the amount of their resources, and presumably their hunger for more work, after they have ascertained that the decision rests with a Committee who has shirked the appointment of a professional adviser to act in a purely professional manner in a purely professional matter. The Lay-Committee in its ignorance of architecture, and the machinery by which it is only too often produced, is naturally caught open-mouthed. It seeks safety by following the line of least resistance, and thinks that, because Mr. A. has built a Town Hall which has not tumbled down, he must surely be safer to trust with another Town Hall than Mr. B., who has only built a Library, although the Library be better of its kind than Mr. A.'s Town Hall. The principle is absurd, and we touched upon it some weeks ago in dealing with certain aspects of " official architecture," for it is this sort of thing which tends to make architects stereotyped specialists in a dead art instead of versatile exponents of a living one.

The invitation to architects to send in specimens of their work having been responded to, we can expect no other result than that the palm of victory should be given to the runner with the longest list of " events " to his record ; we should not blame a Committee for perpetrating such a blind act ; the members could hardly be expected to know any better. The error would not be there, but in their taking upon themselves the privilege of adjudicating upon what is practically a limited competition, and it lies primarily with the architects for submitting their work to be judged by untrained minds. A violation of the rules of etiquette is no mark of genius or learning, but, apart from such questions, it is obviously unfair to any younger men who might be amongst the " invited " ; it goes without saying that " to him that hath shall be given and from him that hath not shall be taken away even that he hath." If Mr. B. is never to be given a school to build because he has never built a school, it is clear that his experience will be confined within narrow limits, and many a reader of this article will cast his thoughts back to the client who gave him his very first commission ; viewed in this light, he will at least acknowledge this client to have been brave, almost heroic, whatever his other merits or demerits may have been, for he it was who entrusted him with a commission knowing that he had not previously designed and executed any building at all in his own name.

Now, this attitude of the lay-mind towards architecture is becoming serious, and it is quite time that in more ways than one architects should take a stand and make clear their position. Our hopes for the future of our art centre largely round the public ; there never were such means of acquiring an intelligent interest in architecture open to them as there are to-day ; books without number are being published as much for the " general reader " as for the professional student ; lectures free to anyone who cares to apply for admission are being delivered practically every day at this season of the year at the leading educational establishments in the country ; the daily Press is awakening to the vital importance of beautiful homes and dignified cities, and is preaching spasmodically what the professional Press has been urging for years. All this is tending to educate the public and to open up the one road by which the fine arts may be restored once more to their rightful place in this country, and there is no more hopeful sign and no tendency which it behoves us to encourage and help forward more earnestly. But it has its dangers ; it does not follow that because they benefit by the available means of acquiring an interest in matters architectural the public are to take upon themselves duties which these very books, lectures, and articles are meant to teach them, namely, that the art of architecture is too big a subject to be trifled with by amateurs. They should realise that all matters of technical import should be referred to those qualified by training and experience to deal with them, seeing that they alone are fit to plunge into the deep and troubled waters, the shallows at the brink of which provide such excellent paddling for those who have neither the courage nor the skill to invade more than knee-deep. " The tyranny of the assessor," as a correspondent points out in a letter we publish elsewhere, " is nothing to the ignorance of the Lay-Committee."

The acquisition of a little knowledge is always dangerous, but it is particularly so in the case of such a pursuit as that of architecture, whose appeal is peculiarly wide : smatterings are easily acquired, and an apparent show of knowledge can readily conceal an absolute ignorance of the principles underlying it. Architecture is a great constructive art ; the outward forms, colours, and decorations are mere language by which the skilled architect expresses himself, yet people who have not the least comprehension of the constructive problem, which was the *real* thing with which architects of all ages, no less than those of our own day, have grappled, and to which they have given this or that expression by accident or design, are setting themselves up as critics and taking upon themselves to say what is good architecture and what bad, and who is the best architect of a given number. As a matter of fact, the opinion of the person with no technical knowledge and no special training in a particular craft has little value ; more than that, it may be mischievous, and when it is given collectively by a Committee or Board constituted of such persons and by the irony of fate with powers for the time being to tie the hands or reject the projects of some architect who finds himself unexpectedly at their mercy, it may be positively harmful to the progress of our art, and architects should stand shoulder to shoulder to resist it and annul it whenever occasion arises.

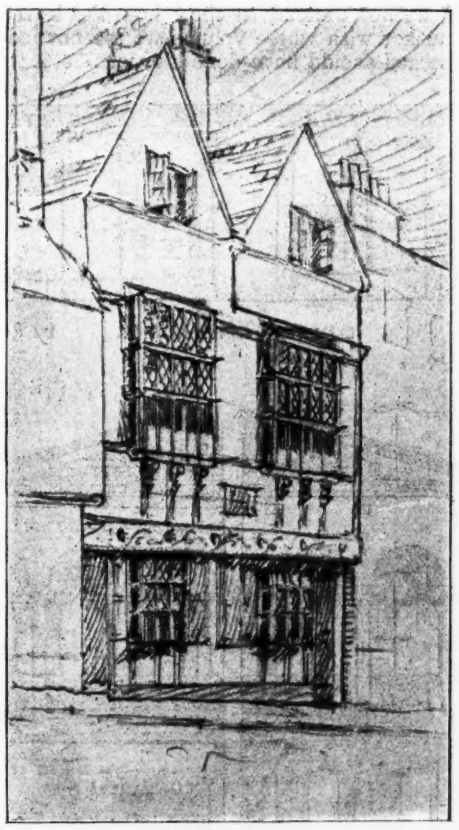
It may with a certain amount of assurance be urged that any architect who has been building for ten years, and building well, is fit to be entrusted with the design and execution of any ordinary architectural work, for the principles underlying all kinds of building are the same : the planning and the question of outward expression will be the only aspects of a problem upon which one unacquainted with any particular kind of structure will need to focus a trained intellect. And this concentration of a fresh and vigorous mind upon an entirely new problem has been productive of some of the happiest results which the chronicler of modern architecture will be called upon to record. We want to see building schemes in the hands of the most thoughtful and scholarly architects, and we are training them every day ; we want architectural literature from the pens of writers who know *first hand* what they are writing about. We must be broad in our sympathies and firm in our convictions, if we are going to hold our own in a restless age—an age of inquiry and undigested thought. Above all, the profession must do what they can to make sure that their interests are being watched and guarded in all places and at all times by those who really have at heart the furtherance of architecture and the constructive and decorative arts allied with it.

NOTES.

Building in Regent's Park. BOTH the *Observer* in its issue of the 8th inst. and the *Standard* in its issue of the 7th inst. call attention to the danger threatened by the erection of further buildings in the private enclosures of Regent's Park. The Marylebone Borough Council, within whose area is contained 362 acres of the Park, and the Metropolitan Gardens Association have both made emphatic protests against the proposals which have been made. The latter body say that "The operations are being conducted on Park land which was formerly held on an annual tenancy by people who lived in villa houses next to it. Everyone understood that when the leases of the houses fell in the land would be added to the Park, and as these leases fall due in the near future it is with considerable apprehension that we view these building works"; further, if "buildings are allowed to be erected in the present instance, what guarantees have we that others will not be erected on the other enclosures?" It is pointed out that the new buildings of Bedford College, occupying no less than 10 acres, have already begun the process of enlarging the Park into a town, and that two other dangers are threatened—first, the proposal to continue Portland-place, linking it up with Portland town; and, second, the possibility of part of the Royal Botanic Gardens being selected as a site for London University. Attention has been called to these dangers in the House of Commons, and the likelihood of the last suggestions being entertained was contradicted by Mr. Wedgwood Benn, who, replying to questions put on behalf of the First Commissioner of Works, also said that the Office of Works had not received any suggestion with reference to Portland-place, and there was "little probability of its being agreed to if put forward." In view of the importance of preserving London's open spaces we hope that the protests made will arouse sufficient opposition to secure the defeat of any such proposals. We are glad to learn that the appointment of a House of Commons Committee to deal with these and similar proposals is mooted.

St. Paul's Cathedral. IN a letter to the *Times* of the 10th inst. the danger threatening the stability of St. Paul's Cathedral by the construction of the proposed tram subway is again drawn attention to by Mr. Mervyn Macartney. This is no idle scare, but a well-founded note of warning sounded by one who is in a position to speak with authority. It appears that from the east walls of the Cathedral to the side of the tunnel would be only 65 ft., and that the bottom of it would be but 6 ft. above the footings at their deepest point. Considering the nature of the subsoil and the presence of water, any excavating which is likely to drain off the water is almost certain to lead to subsidence unless extraordinary precautions in the way of underpinning are first undertaken. That the stability of the Cathedral would be endangered by such tunnelling operations as are proposed, without these precautions being first taken, goes without saying, and we think that the authorities have good cause for drawing attention to a serious menace to the National Cathedral. This may be a utilitarian age, calling for all manner of increased facilities for transit, but it behoves us first to safeguard our ancient monuments, and none more jealously than St. Paul's Cathedral. By adopting Blackfriars Bridge as the link between the tramway systems risk to St. Paul's would be averted.

"Thoughts on Architecture." WE are glad to notice an interesting lecture on "Beauty in Architecture," delivered recently by Mr. W. S. Purchon, A.R.I.B.A., at Sheffield, which we print in this issue. The lecturer very truly states that "One of the most important qualities in architecture is unity"; . . . "the various forms which compose a building must be so arranged and welded together as to form a single whole; no part of a design must look like an afterthought." In saying that "Proportion is a relative matter, the harmonising of the shapes of the different forms with each other and with the whole," we feel Mr. Purchon's definition a little incomplete, as it has surely more to do with space than actual form except in so far as form is expressed by space? In other words, the lecturer seems to have harmony even more in his mind than proportion, though harmony can only be obtained by the observance of the canons of proportion which dominate everything else. We cannot agree with the statement that Blore's front to Buckingham Palace is "not really so bad as it is supposed to be." But the lecture, as a whole, is one of those thoughtful attempts to recognise first principles, which are in architecture the one thing essential, as clear and logical thought must be a necessary forerunner of successful accomplishment.



Joiners' Hall, Salisbury.

From a sketch by Mr. Leslie Barefoot.

Of the several incorporated companies which formerly existed by Charter in this city, the Joiners alone retain any premises of architectural merit. Their building stands in St. Anne's-street on a steep slope. The carved brackets supporting the upper windows are attributed to the hand of Humphrey Beckham, a native of Salisbury, during the reign of James I.

The Piccadilly Site, Manchester. WE much regret that the Manchester Corporation should have put architects to the enormous labour which a competition for a public building of the first importance involves, and then proceeded to consider whether it was a project they wished to carry out! Such an inversion of the positions of the cart and horse is productive of the greatest injustice to architects. Every public body should be competent to decide its own wants, and not until those wants have been thrashed out should it ask a body of professional men to submit designs on the obvious implied understanding that someone of them will be entrusted with a building. The fact that the profession does not work for money premiums, however considerable, but for the opportunity of designing and carrying out buildings which will bear the tests of criticism and time needs constant and vigorous enforcements. The Commission now sitting at the Manchester Town Hall to consider to what use the Piccadilly site should be devoted is a bad instance of the way in which we are treated by the public whom we try to serve. We hope that among a multitude of counsellors the Corporation of Manchester may find wisdom, but we wish they had done so before and not after they had put the profession to the trouble of a competition.

The Railway Strike. IN another column, under "Strikes and Lock-outs," we draw the attention of employers and employed to the very serious effect the constant resort to strikes has on the wages of the working classes and the trade of the country. Since those observations were written a strike has been commenced on the North-Eastern Railway upon wholly inadequate grounds. A main line driver was charged with having been drunk when off duty and of assault. The charge for assault was not made out, but the man was convicted of drunkenness and, according to the reports in the Press, he was reduced in rank to a pilot engine-driver. It is apparently contended that he was wrongly convicted, and many men have gone out on strike. Their action in so doing will be noted by the public, in whose interest the action of the railway authorities was taken. Men occupying positions of such responsibility as engine-drivers should be as sober when off duty as when engaged in their duties, and a railway company employing a man in such a capacity after he had been convicted by a properly constituted tribunal of any insobriety would be guilty of a serious breach of duty. A strike instituted on the grounds that a company shall not perform a duty to the public is an attempt at intimidation which can only be universally condemned. There are constitutional methods of testing the justice of a conviction, and the company have certainly not shown any desire to be severe with the man, but if judicial

decisions are to be made the subject of strikes discipline is at an end, and the public are threatened with serious danger. Whatever may be the merits of the particular case, it is obvious that it should not be the occasion of a strike, and the action of the men shows the reckless use they make on the least excuse of a remedy which should only be resorted to as a last resource in trade disputes of a serious nature.

"BYZANTINE CHURCHES IN CONSTANTINOPLE."

By Professor W. R. Lethaby.

In the fine new volume published under this title* Dr. A. van Millingen gives us a worthy companion to his authoritative work on the city walls of Constantinople, and one with a more definite appeal to architects. These two works, together with the comprehensive volume written by Mr. Dalton on Byzantine Arts other than Architecture and Miss Bell's accounts of her explorations, are providing us for the first time with adequate material for the study of Byzantine archæology. If Mr. Antoniadi, who for long lived in England and writes perfect English, would issue a condensed version of his great work on Sta Sophia for our use we should be archæologically happy.

Some acquaintance with the main principles followed by the Byzantine builders of the best time—that is, the VIth century—may be recommended to all modern architects. The more modern they are the more they may profit from a contact with this very free and very reasonable form of ancient art. Nothing is so likely to break down the dreary "Classic" or "Gothic" view of architecture. I do not recommend it, vital and beautiful as it was, as "Byzantine," but rather as a third link in the long chain to which we should be adding our own contribution.

In the preparation of his volume Dr. Van Millingen has had the assistance of Messrs. Ramsay Traquair, W. S. George, and A. E. Henderson, all architects with a competent, first-hand knowledge of Byzantine buildings. It contains 92 plates, 116 plans and other figures, and 330 pages of text which gives a complete historical and architectural account of the now existing churches of Constantinople.

This admirable book has given me very much pleasure, bringing back, as it has done, the memory of a fortnight of delight spent in visiting several of these churches nearly twenty years ago with my gifted friend Mr. Harold Swainson. We were taken to them by Canon Curtis, who did good work in Constantinople, and we saw many things which have probably now passed away. By the side of the then recently-made railway which skirts the shore outside SS. Sergius and Bacchus there were heaps of Byzantine capitals and other fragments. A little further on a large section of the sea-wall had the upper part of its brickwork set in patterns, and the walls were largely intact. An archway with Victories on either side formed an opening in the wall to the quay on the Golden Horn, and many interesting marble fragments appeared here and there in the masonry, most of which have probably been now gathered into German museums. Outside of the wonderful land-walls were only cypresses and turbaned tombs—nothing ugly. A small house near Gul Djami, which Canon Curtis thought occupied the site of the Church of the Holy Apostles, had two marble capitals of the wind-blown acanthus type forming a step to the entrance. The shoemakers working at the doors of their little shops all sharpened their knives on pieces of royal porphyry.

The English method of reviewing books as practised in the literary journals of omniscience should be an offence to people who like to call themselves practical. The staple of such "criticism" is to keep on saying that any given work might be different from what it is—if blue, say it should be red. I cannot pretend to show how the learned author with whose volume we are now concerned should have done his work better, so I will only venture to thank him, and then, making use of a few points in his great mass of material, I will endeavour to discuss them.

The Church of St. John of the Studion was a noble basilica built in the Vth century. I say "was," for, except the western portico and the outer walls, it is now a squalid ruin. It seems to have been nearly perfect in the XVIIIth century; it degraded quickly during the last century; in 1900 it was injured by fire, and later a heavy load of snow broke down the roof. The portico, opening on a pleasant court, once the Atrium, is of great beauty, and happily gives us some indication of what the internal order—which appears to have ranged exactly with it—was like. Over the aisles were galleries supported by a marble entablature resting on verd-antique columns. Above the marble beam stood another range of columns supporting the roof. This is a very beautiful scheme for a great congregational building. The double tier of columns separated by a marble beam is found again at SS. Sergius and Bacchus. In the flank walls of the basilica are two ranges of windows, the upper ones being large. There is a splendid marble floor; finds of tesseræ and other evidence show that the upper parts of the walls were covered with mosaic, while the lower were plated with marble.

The most valuable old description of St. John of the Studion is that of Pococke, which I may quote, as it has not been used by Dr. Van Millingen:—"The finest mosque after St. Sophia is called by the Greeks Constantine's Church, but is the church of a monastery called Studios. There is a very handsome portico, with four pillars of white marble, which support a very rich entablature, *there being another of the same kind within.* The nave is divided from the aisles by seven verd-antique pillars, 6 *ft.* 2 *in. in circumference. I took particular notice that they are of the composite order.* Over these are as many more *pillars of the Ionic order*, and, probably, of the same material, but they are whitened over; there appears to have been a gallery on each side, which is not remaining. There is a cistern under a Court to the south, in which there are four rows of Corinthian pillars."

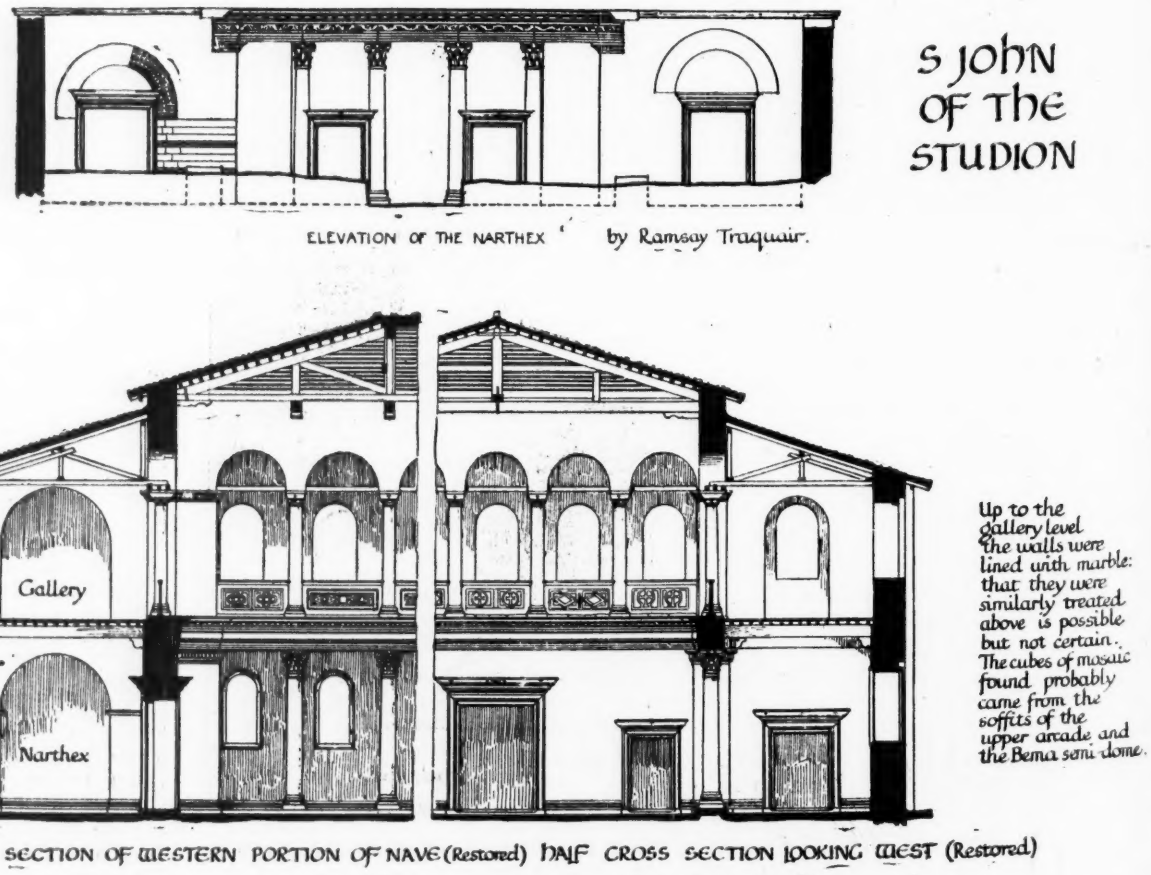

S JOHN OF THE STUDION
ELEVATION OF THE NARTHEX by Ramsay Traquair.
SKETCH RESTORATIONS by W. S George
in accordance with existing indications, and the analogies of Eski Djuma and S. Demetrius Salonica.
Gallery
Narthex
Up to the gallery level the walls were lined with marble: that they were similarly treated above is possible but not certain. The cubes of mosaic found probably came from the soffits of the upper arcade and the Bema semi-dome.
LONGITUDINAL SECTION OF WESTERN PORTION OF NAVE (Restored) HALF CROSS SECTION LOOKING WEST (Restored)
feet 10 5 0 10 20 30 40 50 60 feet
cm. 100 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 metres

Fig. 1. From "Byzantine Churches in Constantinople."

(By permission of Messrs. Macmillan & Co.)

* "Byzantine Churches in Constantinople." By A. van Millingen. (London: Macmillan & Co. Price 31s. 6d. net.)

In this account I have put three especially valuable observations in italics. (1) The internal entablature was similar to that of the portico. (2) The lower range of marble columns, about 2 ft. in diameter, were "composite," and different from others in

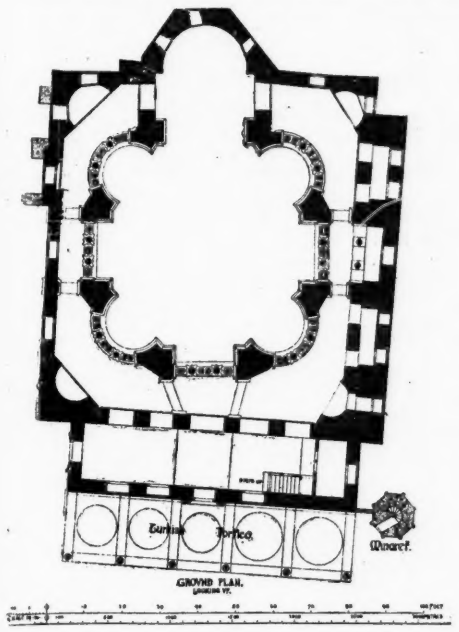


Fig. 2. Church of SS. Sergius and Bacchus, Constantinople: Ground Plan.
From a measured drawing by Mr. A. E. Henderson.

the Cistern, which are described just below as Corinthian. Now, the capitals of the portico are "composite"—that is, they have acanthus leafage below and big volutes at the angles. The internal columns, therefore (as well as the entablature), were like those of the portico. Gillius, indeed, as quoted by Dr. Van Millingen, says that the internal order was like that of the vestibule. (3) The upper columns were Ionic. These points are all properly assumed by Mr. George in his restoration (see illustration reproduced on page 702, Fig. 1), but it is satisfactory to find the ordonnance of the interior so clearly described. May I say here that I agree with keeping the roof low and leaving out clearstory windows? The upper windows of the galleries were doubtless made so large as they are to light the nave. Altogether we get a very complete restoration of this noble early basilica.

When I visited the church there were one or two finely-carved upper blocks of capitals lying in the Atrium Court. One of these I believe I recognised last year in the Berlin Museum. I also have a note that Dr. Freshfield—to whom we owe so much as for long the only student of Byzantine art in England—bought and brought away some carved capitals because the Turks were firing pistols at them. One of these has cornucopiæ on the face and "thistles" at the angles. This, however, would have been later than the basilica.

The plan and whole structural scheme of the Church of SS. Sergius and Bacchus (Fig. 2) is wonderfully perfect—a single and complete work. It is pointed out on page 71 how "the octagon stands askew within its rectangular frame," so that they "have not the same orientation." It is questioned whether this was due to inaccurate work or "the result of the effort to adapt the church to the lines of the earlier Church of SS. Peter and Paul, with which it was united. If we may take the plans as accurate, it is architecturally certain that the adjustment was intentional. The effective interior and its axial vista is deliberately twisted 5 deg. or 6 deg. from the central line of the square building. It is done very skilfully; the narthex and its entrance-door are pushed to the south of the west front, while the apse is pushed to the north. Moreover, the whole bema and apse, with its east window, are planned on the oblique axis, so that all the important points in the vista are in the same line. It would be worth while comparing the direction of sunrise on the day of SS. Sergius and Bacchus with that of SS. Peter and Paul to see if they would offer any explanation of the change of orientation. It is certain, I believe, that St. Sophia points to the sunrise of Christmas Day. In any case, there can be little doubt that SS. Peter and Paul was first built, giving the general direction. This church was almost certainly on the north of SS. Sergius and Bacchus, as indicated by the thinner wall here as compared to that on the south side.

When Swainson and I visited the church he set himself to make out the monograms on the capitals, which, I believe, he was the first to do. He afterwards published them in the *Byzantinische Zeitschrift* (Fig. 3), and pointed out that, although the name of Theodora appears as well as that of Justinian, her title Augusta is not given as at St. Sophia. I gave my attention principally to the form of the dome, describing it thus:—"It is not properly described by Salzenberg or Choisy. It is not spherical, nor set on regular pendentives, but each angle of the octagon being rounded into a niche, the dome springs in sixteen sides, the alternate ones over the angle niches being concave to the interior. On the inside modelled plastered ribs follow the sixteen divisions and surround the eight arches. This is much disguised with Turkish painting, but it is certainly Byzantine." I should add that it is not so much that the "sides" are alternately hollow and straight, which would make a perfect geometrical device for setting a cupola over an octagon, but the alternate hollowed sides rise at first rather vertically and then are slurred into a flatter concave. The form has thus no strict geometrical definition, but it is very delightful, especially on the exterior where the leaden skin fits over the "bumped-out" parts. As Dr. Van Millingen points out, the marble columns of the interior are "in pairs, alternately verd-antique and red Synnada marble"—those of the straight sides are green and those to the alternate curved bays are red; this is a precedent followed at Sta Sophia.

It is noticed that the arch at the foot of the staircase to the gallery is built of fragments "from the old ciborium or eikonostasis." Not from the latter, I think, for they are small in scale, and it is likely that the eikonostasis was formed by a continuation of the lower order with its entablature. Note how this ends now at the side of the

Fig. 3. Monograms on the Capitals of S. Sergius at Constantinople.

opening into the bema (A in Fig. 4). In this case the great inscription of the interior would have begun here, and it seems to call for a beginning of some length.

On St. Irene it is perhaps better not to speak in any detail before Mr. George's

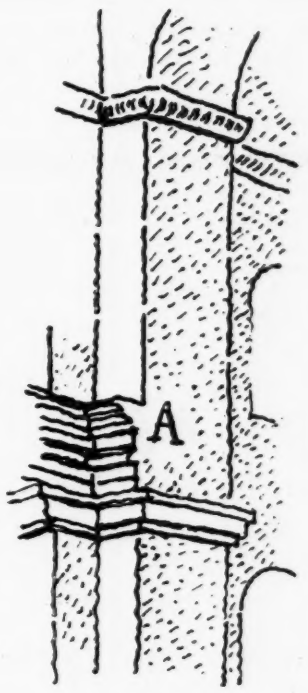


Fig. 4.

monograph is published; but there can be little doubt that, in the main, the suggestions offered in this volume are sound, including that as to the original form of the nave. Perhaps, however, Justinian's share in the present church is a little understated. In the chronological table at the end of the book the early part of the much-rebuilt Chora Church is assigned to the VIth century, but St. Irene only comes under the VIIIth century as "St. Irene, 740." Rivoira has lately assigned the whole structure to the VIIIth century, but I feel that I may still say that "the originality of the scheme . . . . . and the large freedom of the handling marks it as of the VIth century."

The VIth-century Church of St. Andrew, in Krisei, is a small structure of very great beauty which was hitherto little known. I am able in Fig. 5 to reproduce the isometrical section given in the book.

Of the later buildings I cannot speak at any length. St. Mary, Pammakaristos, still has a fine mosaic in a dome and an important east front. The exterior of the apse of the side church, with its niches and the series of triangles under the cornice, should be compared with similar features at Murano and St. Mark's, Venice. This part is doubtless a work of the XIth century. The comparison shows how strictly Byzantine the Italian churches just mentioned are.

In St. Theodosia I drew the cross incised on a slab figured on page 174. It was then a little more perfect, for there was a disc at the end of the arm, and the foliage finished below it instead of passing up to the upper quarter space.

Pococke gives the best old account of the church, or group of churches, of the Pantokrator:—"Another church converted into a mosque is on the brow of the fourth hill. It was dedicated to the Almighty, has two porticoes, and is divided into three parts, the domes being supported with pillars of red granite. The whole is adorned with the figures of the Apostles and the history of Our Saviour in mosaic work, and the subject of each compartment is described in Greek; the Turks have disfigured the faces. On the outside of this church there is a very fine coffin of a single piece of verd-antique of a very extraordinary size; there are crosses cut on it." There were imperial tombs in the church, and this was evidently

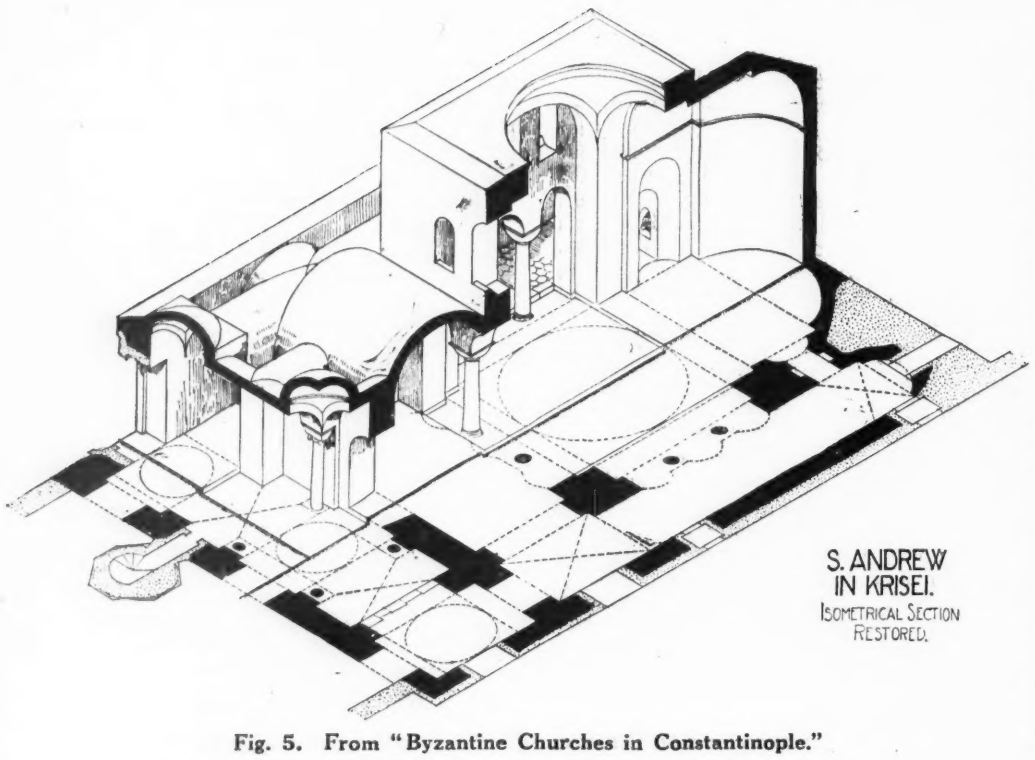


Fig. 5. From "Byzantine Churches in Constantinople."

(By permission of Messrs. Macmillan & Co.)

one of them. I believe we saw such a sarcophagus in the street not far from the church.

Dr. Van Millingen, in describing the middle church of the group, says:—"The floor in the archway leading into the south church is paved with marbles forming a beautiful design. If the whole floor was thus decorated, the effect must have been extraordinarily rich." It is a work of *opus sectile* of great interest, as being the prototype of similar pavements in Italy. In a plan of the church by Texier at the Institute of Architects this elaborate floor is shown as covering the central square area between the four columns of the south church. "Fragments of fine carving have been built into the pulpit of the mosque, and over it a Byzantine canopy." I remember that we climbed up the steep steps of this beautiful pulpit. The sides of the canopy are marble slabs with "arches" cut out of them. In the spandrels were crosses in shallow relief (now defaced), and on one side three monograms. The first of these seems to be Kyrie Boethei. I trace them from sketches by Mr. Swainson. (Fig. 6.) The mosaics described by Pococke have disappeared, but some marble wall lining still exists, with a cipollino dado, and then above a band of verd-antique a tall central panel of red surrounded by two wide bands, verd-antique and red.

Dr. Van Millingen brings his work to a close with a full account of the Chora Church, the least-injured ancient church in Constantinople. The resemblance of its east end

Fig. 6.

to that of Sta Sophia Salonica is pointed out, and in the architectural description it seems to be suggested that the older parts go back to the VIth century. This cannot, I think, be the case in regard to the main apse, for it has a wide triple window of a late type and two external niches like those mentioned above as characteristic of the XIth century. The "restored bay" on page 315 also looks late, and it seems to me that the old part, irrespective of foundations, is not earlier than the XIth century. The more cautious historical text seems to agree with this view. A claim for the VIth-century date of the older part was made many years ago by Professor Hayter Lewis in the Procopius issued by the Palestine Pilgrims' Text Society.

I fear that the wall paintings of the parecclesion have faded much since "my time." Then the coloured interior was of great beauty, and the paintings were interesting even compared with the splendid mosaics. Notice in Fig. 99 a band of mosaic of Italian "Cosmati" type. Similar mosaic patterns have been found at Daphne, and it seems certain that such Cosmati mosaics were of Byzantine origin.

I had not thought of writing so much. The interest of the volume has drawn me on.

W. R. L.

OFFICIAL ARCHITECTURE IN INDIA.

WE have before us Mr. Begg's Annual Report,* illustrated by a selection of the photographs supplied to him of buildings carried out under Government supervision, which is specially interesting, coming, as it does, at a time when the building of New Delhi is under consideration.

It contains clear evidence of the number and importance of the works executed by the Government of India—that remarkable experiment in the world's history, the almost despotic government of an Eastern people by a Western in the interests of the governed rather than that of the conqueror.

Such work as devolves on the Consulting Architect must in the nature of things be exceedingly difficult, as it is work carried out without the adequate assistance which would be forthcoming here, and in a trying climate, and confronted with the problem that Kipling puts into the words "East is East and West is West, and never the twain shall meet"; and if we criticise we do so with full knowledge of, and sympathy for, the difficulties of those who are placed in so onerous a position.

The Consulting Architect gives a list of twenty-four of the most important works coming under his care during one year, and when we mention that this includes two churches, five post-offices, and three Court houses it may be readily seen that the capacity of the ablest designer and organiser may well be overtaxed.

We believe in clear thinking and plain speaking, and we hardly understand Mr. Begg's first impressions of the Taj, or can quite see the bearing they have on such a Report as this; we, however, quote the passage as being interesting: "I declare the Taj is not architecture—not, at least, in the accepted sense. Something far finer, perhaps, better, higher; art of transcendent order, maybe; poetry in craftmanship, music in marble; an inspired dream of a hitherto unattained future caught and rendered solid. Solid, yes; but hardly real. And the architect who would be so vain as to go to it seeking notions for his work—if anyone worthy to be called architect, who had an inkling of what to expect, could go to it for that base purpose—would come away disappointed."

In contradistinction to this rhapsody Mr. Begg utters sound sense when he says: "Now, if it be true that native Indian architecture has died under our rule, I think it very doubtful whether we could be blamed for it. Only art with very little vitality can be killed by Government letting it alone, which is all we are accused of doing. It must be unworthy to live if it cannot survive the want of direct Government patronage."

The buildings illustrated fall under two heads, those which are frankly English in design, like the Calcutta Medical College, designed by Mr. Begg, and the new Secretarial Council House, carried out under Mr. Ransome and Mr. Begg; and, on the other hand, such instances of an Eastern rendering as Muir College, Allahabad, by F. O. Oertel, and the Daly College, Indore, by Colonel Sir S. Jacob, K.C.I.E.; and we are sorry to say that neither type strike us as being on logical lines.

Those first mentioned are but ordinary Georgian design, having little to differentiate them from the buildings of this country, and the latter are a lifeless and uninspired effort at imitation.

Nothing ever designed had stronger vernacular feeling than our own Georgian work; it suits our climate, and it suited the conditions which brought it about, but it is one of the last styles to accord with India, or to be in place in the tropics.

Neither do we feel that we can adapt the architecture of the Moghuls and breathe into it the spirit of living architecture. We believe that a *via media* is to be found in some style built up on the basis of the Southern European Renaissance, the type of Spain and Italy and the Colonial Empires of Spain and Portugal.

In the Portuguese colonies of Maçao and Goa, and in the lands which once formed the Colonial Empire of Spain, in especial Mexico, we are nearer what we require. In these places the Renaissance was carried out by native workmen under a European ruling race; and in Mexico especially the art of the conquered race modifies the type and gives it local colouring.

In Mexico, too, buildings had often to be carried out in materials which were far from being of the character we consider sufficiently good in Europe. The Americans have shown us how well the Renaissance is adapted for the conditions of a hot climate, but it is architecture characterised by a larger and freer handling than that which is indigenous and suitable here, and the American architect has shown his adaptability by many delightful buildings in Southern California, which are outcomes of the picturesque local traditions left by the Spanish Missions.

We must hope that the building of the new capital of India will be an achievement which will demonstrate our ability to rise, if not to the full height of our opportunity, at least to a large measure of success, and that it will react and revivify the official architecture of our Indian Empire.

* "The Annual Report on Architectural Work in India for the Year 1911-1912." By the Consulting Architect to the Government of India

EXHIBITION OF THE ARTS AND CRAFTS SOCIETY.

MANY changes have marked the progress of art in the last fifty years. At first it was a strife, and, winning, the progress became triumphal, until to-day we may join in with our fresh unstained banners and enthusiasms; and, instead of dissipating our strength and energy in the battle, we may use it legitimately in our work. The Society of the Arts and Crafts was, in some way, a pioneer band. Prophets, it is true, had gone out before and prepared the way, but it was still rough, full "of pitfalls and of gins." That some fell by the roadside was inevitable, but many won through. Now, with a certain air of triumph, they hold their tenth exhibition, at the new Grosvenor Gallery.

Criticism has a persistent way of regretting "the good old time"—the habit is as old as Solomon—always to the disadvantage of to-day. The present exhibition has been disparaged very generally—"it is inferior to the last." It is difficult to compare things separated by three years, and, besides, that is quite unnecessary.

Has the Society achieved its aims? Is it still a healthy body? Surely both questions may be answered in the affirmative. It hardly matters if the exhibitions vary in merit. That is inevitable; for, after all, once the ground has been opened and the seed sown, there are influences beyond our knowledge which touch the harvest to golden plenty or blight it to thin penury. It may be unfortunate, but genius, which turns the course of life, the direction of art, into unknown and new ways, from its very infrequency, is almost worn out before the first clearing is reached.

Many great voices are stilled, that we of the younger generation—from our nearness perhaps—somewhat disparage. Ruskin, Morris, and the Pre-Raphaelites may seem to us to have builded on strange soil, but we must not forget that we use their foundations to raise the fair fabric of art which our generation hopes to raise.

Day by day we move further away from their first designs; we alter window, frieze, and cornice, and the conception widens out, disclosing ever new beauties, but we built upon what we did not lay. Somewhat Titanic hands laid the first stones!

Much as we hope for the future, we cannot find it in ourselves to call this a great age of art. We refer not to lack of great artists, but to the attitude of a whole people towards art. It is a thing apart from life. If we allow this, it follows that, beyond the accident of the individual, we must be content with less.

Judging this exhibition, let us adopt a suitable criterion, not looking for peers of the best left by the ages, but for lesser things. It may hap we shall find the best, but, at any rate, we shall not be disappointed. Of the work of architects there is little. Sir Robert Lorimer, however, finds time to let his fancy flow out to the making of little things. And his exhibit is so various that one is led to believe that the true architect is the head and front of designers. What a charming thing is the carved and coloured crest of the late Duke of Fife (101)! It is decorative heraldry—not the commercial work of the Heralds' College—without any pretence to reality or that superfine finish that destroys the medium. It is frankly a piece of pine carved and painted to the similitude of a mounted knight in a gallop. Some of the credit must be given to Robert Young, who carved it, who stayed his hand before it had gone too far. Two dressing-glasses (94 and 98), from the designs of the same architect, show his appreciation of dainty form and material. The general outlines, which are similar and traditional, are delightfully simple, whilst the form of the tops of the glasses is intricate enough to show the beauty of the cross-banded wood. Little ivory finials and drawer-handles make playful dots of colour. Equal knowledge of art make his tables (89 and 90), bookstands, etc., pleasant things to look at. He understands that it is good to omit, good to allow material to be its own sufficient excuse.

In the vestibule there is an extremely interesting design for a barge by Francis W. Troup, for Hertford College Boat Club (497), which should make a delightful addition to river architecture. Needless to say, it is quite unlike the usual houseboat, which has to be covered with flowers before it looks anything but derelict or worse. W. Curtis Green shows photographs of a small church (518), very simple in idea and in execution. Indeed in many ways it shows how good architecture and expense are not synonyms. Another good photographic exhibit is a pleasant cottage at Haslemere, by A. J. Penty (530). C. R. Ashbee does not shine so much in architecture as in other of his multitudinous activities. His isometric drawing of the London Fraternity House (359 A-B) puzzles at first by its strangeness, but when analysed it is a mass of incongruities. Ernest W. Gimson is represented by none of his beautiful furniture, and we have to be content with his design for the Federal Capital of Australia (356), drawn on three large strainers, which shows how fair a city might be, begun and carried out on a preconceived plan. Furniture makes a fairly important part of the exhibition. There is a sideboard, by Hamilton T. Smith (110), in walnut, of simple design, which is very effective. The wood is unpolished, and the three small door panels of the front are chosen for their fine figure. It is a little lacking in suavity, however, because it is almost independent of the past. Without tradition nothing is possible beyond the expression of the plain facts of construction, a little more or a little less disguised. Something remains to be added and makes it art. Yet it must be admitted at once there is nothing amateurish about this work, nor in that other piece of cabinet-work close by—a walnut writing-table inlaid with shell and ebony by A. Romney Green (122). If the latter is lacking in fine form, something is given in compensation in the way of inlay. This inlay is splendid, and of itself gives character to the piece. An armchair (121) by the same craftsman is more supple in design and solves the difficulty of making a comfortable chair good to look on. Several smaller exhibits from the same hand are equally interesting. There is a set of painted chairs with rush bottoms, after an old pattern by Alfred Powell, which are very pleasant (23). A few other painted pieces may be mentioned. A cupboard designed by W. R. Lethaby (328), and painted presumably by the painter of the chairs, is crude in colour. There is no life either about the patterns of the flowers with which the panels are decorated; but indeed the design of the whole is not even worthy of the work upon it. Opposite this cupboard is a small tall-boy by M. Hindshaw, prettily decorated in gay colours which one would love to see in a child's bedroom. It would be a happy child. A more important exhibit, from its size, is the fireplace for Dunsany Castle by George Jack (71). We wish it were better designed so that one might enjoy the carving, which is first-rate technically, but, as it is, it only serves to emphasise the ugliness of the lines of the upper part of the overmantel. It shows at once the gulf that is sometimes fixed between the designer and the craftsman, which can seldom be bridged over in the person of one man. Another case in point is the fireplace by H. Longden (455), which, although exquisitely worked and engraved, fails of any æsthetic purpose because of its lack of idea. Now, the bookshelf by C. Spooner (435) is admirable because of its design, and it is no less so because it was executed by J. H. W. Brandt. These collaborators also exhibit a walnut writing-table (468), very well designed and executed with great taste in the choice of wood. Ambrose Heal's furniture varies considerably in merit; his book and print-case (31) and china cabinet (56), both in black-bean wood, are the best. His very rich sideboard (375) is fulsome, whilst the dining-table in chestnut (151) is archaic. This is too great versatility.

Walter Crane's cabinet in ebonised wood with needlework panels (126) is fascinating, and here again we find the value of tradition, and it would be well if still more inspiration were taken from old models. It must, however, be noted that on the whole there is a great advance in design due to the study and appreciation of old work. In nothing is this more noticeable than in the jewellery. It is hard not to run into superlatives when speaking of this work, and if we were in the happy circumstance of the rich nothing would give more pleasure than to take our lady and deck her out in some of these lovely and exquisite trinkets.

Arthur and G. C. Gaskin are among the most prolific, and we find our catalogue marked again and again opposite their work. Take, for example, the peacock (391 W). It would surely be difficult to find anything more charming in colour and design. There is nothing gaudy about it, but all its small parts combine to make a perfect gem. A brooch by Ethel P. Agnew and a cross and chain by Edith Stewart (390 H and L) may be mentioned. In all this section, so numerous that it is impossible to particularise, there are very few poor designs, and how infinitely superior are even these to the best works of commerce! Yet they are all very reasonable in price. Some of the silverwork is scarcely less interesting. There is a fine sports cup by C. R. Ashbee (153 M), with the beauty of outline and interest in the body that would scarcely be surpassed by the best old work. The wedding-bowl by R. O. Pearson (153 A) is charming. In the same case are two other very fine bowls by Bertram J. Young (I) and Bernard Cuzner (J). All the work in this case is very good.

There is a good deal of caligraphy and illumination and book-design, much of which is surprisingly beautiful. The inscriptions in gold, "DOMINI EST TERRA" (293), by Phœbe Rennell and that other one by Charles Braithwaite (310) are good examples of finely-spaced lettering. There are some good illuminated books by Allan Vigers. That page (C) with the splendid words, "God Almightie first Planted a Garden," is decorated round the margin with the flowers of which the essay treats, rich in colour like a summer flower-bed.

The cases of printed books (337-345) are so good that one need not differentiate between them. The Book of Job (344), by Florence Kingsford Cockerell, and Douglas Cockerell's Etonian Book show what fine work is being done in writing and book-binding. It is always less interesting to criticise designs than the finished work, but there is no actual stained-glass. Some of Robert Anning Bell's cartoons (139-41) are in themselves masterpieces, and would probably work out into beautiful windows. Again, the heraldic drawings by W. E. Hodges (86) would probably make very good windows if carried out carefully. The cartoons by C. W. Whall and M. Hutchinson are of a very conventional kind, and are drawn without any leading. We must say that the work in this section is not very convincing.

The case is otherwise with the exhibit of James Powell & Sons (537). Out of such glasses Keats would have loved to drink—"to watch the beaded bubble winking at the brim." Contemplating these glasses, we longed for an unquenchable thirst in order to try to slacken it out of such exquisite ware. But the prices held us back.

The case of pottery by W. Howson Taylor (507) is another exhibit, interesting because of its variety and intrinsic goodness. Art and science, and sometimes accident, mutually act and re-act upon one another to produce pottery, as various in colour as the rainbow, and with forms as graceful as any old ones. W. H. Cowlishaw's pottery is also very good.

The exhibition as a whole is one of which the Arts and Crafts Society may be justly proud, and all the work attains a fairly high standard in design and workmanship. Some of it indeed is superlatively good. In this respect it is better than almost any picture show we have ever seen. Our difficulty, after two careful visits, is to pick out representative things with some distinguishing character about the rest. And this is no slight one, if one considers the infinite scope and variety of the exhibition.

PICTURE EXHIBITIONS.

THE exhibitions of the New English Art Club had of recent years begun to lose their individual note; they did not vary particularly from the exhibitions of any other more or less advanced society. One was beginning to feel that the Club had delivered its message (and we all know how valuable that was in the nineties). This autumn, however, it seems to have recovered its energy. In the nineties it had to fight against outworn sentimental and anecdotal views which dominated the general view of painting, and it eventually won the day. To-day what has it to struggle for? We scarcely know. Certainly not for the expression of originality, of which we have enough and to spare. Perhaps a little for sanity. The struggle of "the young man knocking at the door" is no longer in question; nowadays he is admitted before he has reached the threshold. And Mr. Augustus John and the other painters of the New English Art Club who have not succeeded to Academic rank can no longer be quite included among the younger generation of painters. Mr. Augustus John's large decorative painting, "The Mumpers," gives the keynote, certainly more than any other picture, to the exhibition. The keynote is, broadly speaking, the substitution of character for the older ideals of what was considered beautiful in painting. As a piece of decoration "The Mumpers" possesses considerable qualities, although we are far from being attracted by the composition as a whole. As the realisation of a subject we can discover little in it that makes for the kind of enlightenment which is communicated by works which endure in art, although it has some charming passages, charming perhaps because they are reminiscent of Botticelli or Leonardo, even perhaps of Mr. John himself, It is all a little noisy and overdone. But we welcome the intellectual energy, the frank expression of a point of view in the picture, not only because these things are interesting in themselves, but because they help to give fresh life to a society that may serve again a useful purpose in the artistic economy.

It is perhaps a far cry from the ultra-modern art of Mr. Augustus John to that of Mr. Anning Bell. The latter painter suggests no difficulties in the way of appreciation. In his water-colours at present on view at the Leicester Galleries, illustrating the Biblical story of "Mary, the Mother of Jesus," he reconciles us to established conventions. Few modern artists have a more distinguished sense of the decorative purpose of painting in which everything inessential is omitted, or can handle plain washes of colour more harmoniously or effectively. In the type of subject of which his present series of water-colours is composed Mr. Anning Bell naturally brings to mind earlier and other treatments—a difficult ordeal for any painter. The spiritual qualities in certain religious aspects of this earlier art can never perhaps be recovered; Mr. Bell, however, goes far to do so largely through his sensitive and unaffected feeling for decorative composition. In the more dramatic phases of his subject he is not so successful as in his groups of little children, or angels, at a prayer on a hillside, in which the spiritual conception is very beautifully suggested.

The range of the art of Mr. Joseph Pennell is concerned with quite other issues than those of the two painters of whom we have been writing. "The Wonder of Work," which is given as the title of the catalogue of his exhibition of etchings and lithographs which are on view at the Galleries of the Fine Art Society, indicates to a certain extent their character. Mr. Pennell has recently visited the works of the Panama Canal, and his etchings and lithographs go to illustrate not only the monumental nature but also the artistic quality which may be discovered in this undertaking. These spacious, vigorous studies are worthy of the artist at his best. The lithographs are exceptionally good, and will certainly add to his reputation.

ON Monday a joint meeting of the Architectural Association with the Art Workers' Guild was held at Tufton-street, the subject for discussion being "The Practice of the Crafts in Modern Building," Mr. Gerald Horsley, President of the Association, in the Chair.

The President,
in welcoming the visitors, said the Art Workers' Guild comprised within its ranks something like thirty different crafts. It was founded about twenty-eight years ago, and he had the honour of being one of its founders, and the object was to afford opportunity for men following different crafts to meet together; at that time such opportunities were very few, and they were in no way organised. It had been a most successful society, and was still in a flourishing condition, and the members had reaped the benefit of becoming acquainted with crafts other than their own. He was the Hon. Secretary for about eighteen years, and looked back on that time with feelings of the deepest pleasure. He thought the subject chosen for discussion gave opportunity for many views being presented.

Mr. F. C. Eden
said that a few years ago they used to be told that the practice of the crafts was the whole duty of architects. Since then their mentors had moved with the times, and now engineering was said to be the "noblest architectural result of the Renaissance," and the one thing needful. The earlier theory was that the workman—craftsman they liked to call him—was to be fancy-free in manipulating his material, and by a flourish of his tools, as by a sort of peaceful picketing, to warn off the architect from ignorant interference with his self-expression. Architects had usually been willing to learn—at any rate up to a certain age—and, though they could not agree to leave carpenter and mason to work their own sweet will entirely untrammelled, they came to see that the touch of Nature and Nature's materials was worth a deal of office drudgery, so that nowadays it might be hard to find one to show the fine impartiality attributed to Sir Gilbert Scott and mark his design for a reredos as being for "oak or alabaster." And, now that they had gone so far with the critics, they pounced on them, dragging with them a new bogy dressed up as an engineer, and affirmed that he was the only real artist in whose mathematical formulæ the secret of architecture lay hid. The old arts and crafts theory was that they should give the carpenter a saw and a log and they need only wait to get a fine hammer-beam roof, just as the co-operation of mallet, marble, and Michelangelo once produced a David. The new theory was to provide an engineer with a book of tables and formulæ, and a thousand tons of steel cut to stock sizes, and the splendid practicality of the result was the only form of architectural beauty possible in the XXth century. He owned to a scruple about subscribing to either of these theories, since they seemed to him to have originated in those uncomfortable shades where cranks and faddists do peep and mutter, and to take but small account the one of things as they were and the other of things as they should be. In any case, the result was to queer the pitch for the poor architect. He might still perhaps have his use if he kept abreast of the latest inventions whereby civilised man hoped to become daily a more and more comfortable animal, and if he be clever and unscrupulous enough to build a box for 150*l.* to keep the uncivilised in. Whatever theories were afloat, it seemed to him absurd to suppose that fine architecture could exist without right practice of the crafts, even the humblest of them. For example, the reason why the earlier works of that great master who had been lately taken from them did not give them the pleasure which they felt they should was surely that at the time they were built the right sort of brick and tile was not to be got. The trade of the brick and tile maker was perhaps the one in which the most real improvement had taken place, chiefly by the substitution of hand-work for machinery, while carpentry continued to deteriorate owing to the increasing use of machinery in the trade. But he wished to confine the few remarks he had to make to one trade, the conditions of which could hardly be said to be satisfactory—that of the house painter. The most they dare expect from him was to lay a sufficient number of coats of good lead paint and match a sample tint with fair accuracy; that he worked with neatness and left no smears on the window-panes. But even in matching a tint his methods were wrong. He would mix a mass of paint certainly, but why was the result so unpleasant when it was upon the wall? It was simply because the only way to get a beautiful effect of colour was by a glaze which allowed the under colour to strike through. The French way technically was better than ours, the difference consisting in the way the first coat was laid over the priming. For this the paint was made into a thickish paste with oil and driers, without turpentine, and this was spread, not with a brush, but with a broad spatula and well pressed home. It took about a fortnight to dry, and was followed by three more coats laid on in the usual way, the only difference being that the brushes used had much longer and softer hair than ours. For decorative objects such as frames, reredoses, images, and screens for churches, and so forth, the best method he knew was to lay a gesso ground over the whole surface, whether wood or stone, and upon this two coats of colour ground in spirit and mixed with spirit varnish. Then a coat of spirit varnish only, and, finally (and this was most important), the glazing or toning coat of colour, wax and turpentine. Tempera colour could be used over the gesso, if preferred, instead of the spirit medium, and could be burnished like gilding where a glossy surface was required. What he had described must not be confused with the method of dirtying carved mouldings that had come into vogue lately. In a recent text-book he had read:—"We are always agonising about design, but design, as Rodin has said, is as nothing compared to workmanship." One was not surprised at Rodin disparaging design, but only that an architect should quote the words with approval. The whole misconception of the position could not be better expressed. The crafts were the ingredients of which architecture was compounded. Each was as necessary as the other to the success of the result, and each was helpless without the co-operation of the other.

Mr. F. W. Troup
said the title given as the subject for discussion was suggested by the President, and he took it that by the "the crafts" he meant to suggest what was often called the artistic crafts as distinguished from what were generally known as the trades connected with building. Every trade, however, was a craft no matter how crudely commercial it appeared at times to be. Indeed, one of the best examples of a

modern craft was to be found in the practice of ferro-concrete. Although this seemed to require the most abstruse scientific calculation of its strains and stresses, and was usually regarded as an extreme example of the useful inroads of the engineer in the province of the architect, it was none the less absolutely dependent upon the most careful craftsmanship for its execution. Ferro-concrete appeared to him to be the modern analogue of a typical mediæval craft. So much was it a true craft that many engineers fought shy of it and declared that they knew where they were with steel pure and simple, but that this mixture of steel and concrete was a hybrid of uncertain strength, and who could tell how long it would last? Its devotees had to admit that it was a young craft, and there might still be about it some mysteries not fully gauged; but they must remember that even the arch in its early stages must have given masons a good deal of trouble before they got the hang of all its possibilities when properly harnessed, and its tricks if used without full knowledge and proper control. Before leaving this group of ancient crafts, which were now usually designated trades, he would like to enter a protest against the assumption that there was no longer in the trades any true craftsmanship. He thought, on the contrary, there was an immense deal of traditional craftsmanship in all the ordinary building trades—bricklaying, masonry, carpentry, plastering, smithing, and so forth. The real trouble, as it appeared to those who were most keenly alive to the apparent freedom, the easy, unfettered symmetry in mediæval work, was that the modern workman attempted to hide all the best of his real craftsmanship beneath a skin of geometric precision, quite unnecessary and usually undesirable. Many architects, recognising this, had attempted to overcome it by using rough bricks, wide joints in masonry, and by other means in other materials had tried to get some semblance of the fling and go that seemed to come unsought in the work of the mediæval craftsman. He feared, however, they must acknowledge that this was only a makeshift. Emanating from the architect, whatever its merits might be, it was more of an artificiality than it ought to be, or would be if it came direct from the craftsman himself. He did not go so far as to condemn these devices of the earnest and conscientious architect. He could not help admiring the results when ably directed and well executed. But he did venture to point out that they were not easily imitated, but easily exaggerated by those who did not always think for themselves, and were inclined to overdo "the very latest thing out." Moreover, it was not a solution of the craft problem, although it might possibly point to and perhaps help in arriving at some cure more radical and permanent. Whilst it was a little difficult to define in general terms the artistic crafts, it would be pretty generally accepted that carving, modelled plaster, decorative painting, and stained glass all came under that head. Most of these crafts were indeed usually practised by men with a special training, but the materials were the same for the crafts as for the trades—the carver decorated the joinery or carpenter's work, the modeller the plasterer's work, stained glass was only glorified glazing, and so forth, so that they must recognise at once that the work done in what was known as the artistic crafts was no more than the ornamental part of the building trades. It required no very recondite reasoning to arrive at this somewhat obvious conclusion, but it appeared as if it were forgotten by the craftsmen themselves. They, too, often dissociated themselves from what he had been calling "the trade" of their craft. They learned to carve and forgot to learn joinery; they learned to model and knew little or nothing of plain plasterwork. If the craftsmen worked more with the artisans of the corresponding trade, regarding himself as a superior plasterer, bricklayer, or smith, and not merely the man to whom was apportioned the duty or privilege of doing the ornamental scraps and finishings, it would go some way in overcoming the difficulties and dangers into which architects fell when they tried to direct in detail the manner in which materials should be finished in the buildings they had to superintend. He would take cognisance of the mason further than as one merely to come on the scene after the building was finished to carve and finish bosses and blocks, marked on the architect's drawing as "left rough for carver." The modeller would have something to say and knowledge from which to say it, with regard to the work of the plasterer generally. He would not, as now, merely deliver so many dozen beautiful casts whose exquisite modelling only made the plain walls look silly by comparison. And, where the case required it, the trained tradesman, or if he liked "artistic craftsman," would merely direct the general finish of the work without introducing any decoration or ornament whatever. The unattainable ideal was, of course, that he should be the foreman of that trade. His guidance of the workmen under him might and should be a real training of the workmen. Coming from a man versed in all the traditions of the craft, his orders and directions would be different from and more effective than those of even the most able architect, whose directions were often regarded and perhaps rejected as whims and fads.

Mr. Christopher Whall

sent a written communication, in the course of which he said the subject was in two parts—with a trenchant division. "The Practice of the Crafts" was one and "Modern Building" was another. He would like to start with the challenging paradox that there was no practice of the crafts in modern building. To tell them why he said that he must define what he meant by the practice of a craft. To practise a craft they must first learn it, and to learn it to any purpose they must learn it as a child when the mind was a *tabula rasa* and the spirit docile and obedient. To learn a craft the learner should begin as a small boy—an apprentice, and his school should be his workshop. In the old days the apprentice worked the brushes, ground the colour, sorted and waxed up the glass on the easel, and so on, and in intervals was taught the elements of his craft, and so by degrees learned all of it with the prospect of being a journeyman and some day a master. Was there any such training now? In a sense there was, but in essence there was not, except in the workshops of those idealists who had set themselves to revive the crafts, and they had already revived the almost forgotten name. In the ordinary shop in which wares were produced there were boys who did all kinds of small services, but when it came to learning their craft they only learned one particular operation of it. Everything was arranged so that they should not become masters. To learn the elements of any craft was the key to the right way of tackling all crafts and the intelligent way of dealing with them and directing them. A man already a craftsman in one material had the key to craftsmanship in general, and saw the whole situation from a right point of view. He would say to architects, and especially to learners of architecture, "Get a workshop knowledge of something."

Mr. W. Curtis Green

said that those who inspired the formation of the Art Workers' Guild had done architecture a good turn; they linked together architecture and the crafts, and had built up a body of craftsmen unsurpassed in their way. As a result of this reunion English churches and houses were the standard of excellence throughout the world. They knew that the practice of the crafts had not touched their cities or reached the sources of production; it had not done so yet, and when they looked back at the last fifty years or examined the present was it not too much to expect that it should in so short a time have reached so far? They had explored the arts and crafts of the East and of the West, of antiquity and of the Middle Ages. Not content with the fulness this knowledge of history brought, they became enslaved first by one period of artistic activity and then by another, looking, some of them, for salvation in the resurrection of the dead rather than in the quickening of their own spirit. At one time it was the convention of Greece, the clearly-defined articulate art; at another it was the orderly and majestic attributes of imperial Rome; again, it was the romance and daring of the Byzantine School; then their hope lay in the Middle Ages, first the Gothic and then the Italian, and later the French development. Each fresh enthusiasm had had its distinguished exponents and had achieved wonderfully fine work in building and the crafts. These individual achievements satisfied all the definitions of great art but one. Collectively they were evidence that the modern was no whit behind his forbears in architectural genius and in individual craftsmanship. In other words, the modern mind was as capable of conceiving noble buildings and of doing beautiful work as that of antiquity or of any age. To name only a few buildings of different phases—St. George's Hall, Liverpool; Old Newgate, Westminster Cathedral, St. Agnes, Kennington, were noble conceptions as creditable to their authors as were the monuments of simpler times. Each in a sense was an example of a still living manner of expression; for every great period had contributed something that could not die, yet of none could it be said that "this is vital," for none were in a language common to all. They asked themselves whether it was just now possible to find a language common to all. Anything added over and above the necessity of the case appealed either to the heart or the intellect; to both if it was a work of art. In the case of the mechanical art of the suburban villa and place of worship the appeal was to the untrained eye. When the intellect came in, whether in Classic, Gothic, or modern work, art becomes conscious; it was only when it became so and recognised the necessity for discipline and control that it could ascend to the heights. On the surface this confusion was not unlike that at the building of the Tower of Babel, but below there was necessity and a basis of unity which would result in another era of vital art. In their wanderings, whether to Versailles, or among American sky-scrapers, or to Surrey farmhouses, they were, let them believe, doing useful service. Their admiration of the civic sense of the Parisian was drawing them to inquire into their methods and aims; their intellect called for the exercise and discipline of orderly and stately schemes shown in beautiful drawings. Their interest in the great American school let them into the secret that the applied method of design was not satisfying the Western world. Their tours among old buildings had taught them the right use of material, and they had mastered the meaning and value of texture; and their little experiments in the planning of pleasant urban dwelling-places had shown them that, while all things might be lawful, all things were not expedient. So that, besides producing individual instances of fine work, they had collected evidence which another generation would sift if they could not. Education consisted in a series of enthusiasms in a series of awakenings. Beginning with the architect and craftsman, it filtered down through the trades and through the public. If education was only skin deep, so were shams. If the false ideals that have so nearly smothered the crafts had taken 100 years to grow up, why should they not pass away in a like period of time? Prophecy was a cheap business if the prophet placed the event sufficiently far away, but faith had firm foundations in the faithful. The craftsman knew that the attributes of his art were not transitory; they might be dimmed in times of prosperity or change, but if they were buried 3,000 years, like the corn in an Egyptian sarcophagus, they would spring to life again in a suitable environment. For a time the environment was unkindly, and the practice of architecture and the crafts called for considerable qualities.

Mr. E. P. Warren

said the question of the controlling of the crafts of traditional building was a difficult and complicated one. To begin with, no architect was worthy of having control of subsidiary crafts unless he had, at any rate, extreme interest in them, and it therefore became everyone who aspired to design and control building to interest himself and study as far as possible the various crafts with which he would have to deal. The conditions under which architects had to work were increasing, complicated, and difficult. New materials, methods, and needs were constantly arising. They had new types of buildings and new systems of construction, but they had always some of the old traditional crafts left to them which must be conducted very much in the way they had always been, and one was that of the mason. In masonry they had still to deal with the cutting and shaping of the mass of stone for their appointed positions on a building, and if they could eliminate as far as possible the steam saw and rely on the mason with his chisel they could still get their work done, especially by country masons, very much as it had been done within the last 200 years. As to carpentry, the output of the steam machine was inevitable, and they could not put back the clock and select their trees and have them cut down and wait three years before using them.

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It was hopeless for architects to think that by using ancient and primitive methods they could really do anything which would give an ancient and primitive result. However they wished, they could not get away from modern trends and fashions. They must accept the methods of the particular age in which they lived, but they could all see that as far as possible the inevitable machine-made piece of material was applied to the place it was fitted for. And what was most important, the architect could in dealing with the ornamental parts of a building select men to do the work and minimise the opportunities, instead of spreading them, so that those who did the work were properly paid. Having selected as good a man as they could get, then give him as much rope as they possibly could. Needless to say, they must get a man who had been trained in a manner which fitted him for employment upon a building. He must have had something of an architectural and building training. A carver might be able to carve something which was delightful in itself, but if in conjunction with a building it did not accept the proportions and sense of the building or the treatment of the material with which it was composed it was no good. Although there was much lacking in the training of architects in the knowledge of the crafts, there was a great deal also lacking in the training for the crafts in a knowledge and sense of architecture.

Mr. C. F. A. Voysey
remarked that the predominant idea in his mind was that they needed to be possessed of some ethical feeling before they could express themselves in any material or in any way. It was no use teaching the crafts until they had taught the use of the crafts—*i.e.*, what was it they wanted to express in their crafts? Mere craft which expressed no emotion they were better without.

Mr. Tapper
observed that in Roman times and mediæval times right down to Georgian times the craftsmen and workpeople were doing things in a more or less self-contained way. Now, when they thought of the enormous City offices being put up, it was impossible to conceive of any question of art entering into it at all. Competition could lead to dreadful results. Crafts as they understood them could only be and were only applied in a very small way, such as when a lover of art said he wanted the very best.

Mr. W. J. Allcorn
said that when people stopped teaching art it would give some of the younger ones a chance. He believed that when they had a traditional builder working in the country the work was as good now as ever it was. The work done in the old castles by builders who had been connected with building all their lives was much better than it was when a London architect was called in.

Mr. G. Leonard Elkington
considered that architects were very much to blame for the divorce of that intimate relationship between the design and the craftsman which used to exist. In the old days, when the workman took a great interest in his work, he was called on to design and cap on a feature appointed to its place in the building, but nowadays that was hopeless, largely because the architects had attempted to create a corner in design and the workman had lost all interest in his work. If they could do anything to prevent the grinding out of the small builder who took a real interest in his work they would get better buildings.

Mr. H. M. Fletcher
believed that workmen did still take an interest in their work, and if they as architects talked to them they would find they were ready to give two or three alternative ways of doing a thing. He had heard American architects express astonishment at the amount of knowledge and skill shown by English bricklayers.

Mr. Theodore Fyfe
thought the discussion had gone off the lines, and was hoping to hear an impassioned speech from a painter as to the employment of his art on a building.

Mr. Napper
humorously referred to the great fuss made about old buildings, and asked them to try and imagine what the building looked like when it was first erected. When a thing was broken they called it art. It might be that a good deal done to-day might get artistic in that way.

Mr. Halsey Ricardo
remarked that it was humanity which really came into art. It was not age or imperfections which made these old things artistic, but the human touch associated with them. They had to consider, however, that they lived in their own epoch and machinery had altered the whole world for them; and crafts had come to be relegated almost to luxuries. All over London there were schools of art, many of them largely maintained by the ratepayers. The students were taught up to a point, and then just as they were prepared to do something they were told to go because they would interfere with trade. He suggested that the walls of the new London County Hall ought to be decorated by those who had attended these art schools.

Mr. W. S. Frith
believed they had as good craftsmen to-day as ever, but the competition of the present day too often meant the getting of a certain amount of work done for a certain sum, and in carving his experience was that the man who had the least knowledge and least conscience was the man who could do it the cheapest.

The President
said what it all came back to was that they wanted more understanding between themselves and their co-workers. The want of sympathy and knowledge between the architect and craftsman was no doubt due to the unfortunate loss of tradition which had undoubtedly taken place in their art, and they must endeavour in the different ways open to them to bring back the feeling and spirit which moved that old tradition.

THOUGHTS ON ARCHITECTURE.*

To define architecture in two words is rather a dangerous proceeding, but for the purpose of this lecture I will call it "Beautiful Building." Before a building can be called "beautiful," and so, to accept my definition, be worthy of the name "architecture," it must possess certain qualities, and it is with these qualities that I shall deal this evening.

First, however, I want to say a word or two on what are, I think, erroneous methods of architectural criticism. Often in the presence of some ivy-clad ruin we are led away by the respect we consider due to old age, by our interest in historical associations, and by the general air of picturesque dilapidation possessed by the ruin, into the belief that we are looking upon a fine architectural work.

On such occasions we should try to remember that the ruin was once a brand-new building, and also, just as it has been said that even the youngest of us may make a mistake, so even the oldest and most dilapidated of buildings may not be beautiful.

Again, when some great new building is erected we are inclined to condemn it, simply because it is new, forgetting that that quality was possessed once in its history by every work of art.

If, on the other hand, we incline to praise the new building, our praise is often based largely upon its size, its great cost, the fact that it is built of some expensive material, or that it is richly covered with ornament.

Or, having studied architecture rather more closely, we may like the building because it does not differ much from buildings of some favourite period, or dislike it intensely because it does differ from such buildings.

These methods of criticism, though I know they are very frequently adopted, are not, I think, the best, and I will now proceed to deal with some of those qualities, which may with advantage be considered when one is studying or criticising buildings old or new.

Unity.

One of the most important qualities in architecture is unity, as I understand it is in other forms of art. The various forms which compose a building must be so arranged and welded together as to form a single whole; no part of the design must look like an afterthought.

A simple example on a small scale occurs in the triforium at Lincoln Cathedral. Here three openings in a wall are made into one composition by means of the uniting arch. While such details or small parts of buildings as this are of great importance, the study of architecture should not be limited to them, as it often is, and I shall next consider the main masses of which buildings are composed.

(The lecturer then dealt with the effect of such a feature as a spire, gable, or pediment in pulling a design together by providing a point of concentration, and with the effect of unity which results from using similar forms for parts which are doing the same kind of work.)

The untrained designer, anxious perhaps to show his versatility, introduces into his buildings a remarkable variety of forms, with the result that the quality of unity is entirely absent.

(In dealing with the various arrangements of the main masses of which buildings are composed a view was shown of the buildings at Philæ.)

As shown in this slide, this example at Philæ is already partly under water, and it will probably be entirely submerged before long. The prospect of this raised considerable discussion in various papers, and in order to simplify the problem as to whether these buildings should be sacrificed in the interests of the irrigation scheme or *vice versâ*, one writer asked us to decide which we should save from a burning building, a valuable old master or a baby.

Punch, thinking this problem still too difficult, as babies differ in quality, substituted Mr. George Bernard Shaw for the baby.

So when I say that I regret the proposed submersion of these buildings, I hope I shall not be accused of preferring the picture to either the baby or Mr. Shaw.

(The lecturer then dealt with the division of buildings into horizontal layers by means of projecting upper stories as in mediæval buildings, by setting back upper stories, by strings and cornices, by the use of different materials, and by treating the same material in different ways, giving the Riccardi Palace, Florence, as an example of the latter.)

When the Riccardi Palace was designed—about 1430—architects in Italy were turning their attention to the masterpieces of classic art, and that is why the horizontal line is so insistent in this example. In Gothic architecture the vertical line is the dominant one, so that in such a front as that of Wells, while there are horizontal divisions, the vertical ones are much more easily seen. It will also be noticed that these vertical divisions are formed by means of buttresses necessary to the stability of the structure, and they are frequently emphasised by being carried above the roof line in the form of pinnacles, which are also useful from the structural point of view.

(Attention was also drawn to the advantage of three unequal stories over three equal ones in mediæval cathedral interiors, and incidentally to the fine effect of the shadow in the triforium.)

Symmetry.

Symmetry is a quality which may be observed in many of our most important examples. It has attracted the designers of all ages, from those of the mysterious Egyptian temples to those of the present day. It will be found that most of the temples of the great period of Greek architecture are symmetrical, and symmetry played a great part in the design of the great buildings of the Romans. In later styles, too, we find much importance attached to this quality, convenience being unfortunately in some cases sacrificed in its interests. Symmetry in a building or a group of buildings helps considerably in giving unity to the composition. If we consider for a moment the Horse Guards building in Whitehall, with its dominating central part, subordinate wings, and the shelters for the sentries in the foreground, the advantages of the orderliness and balance given by a symmetrical treatment must be at once apparent.

On the other hand, we must not ignore the fact that in many charming buildings the quality of symmetry is absent, and a certain picturesqueness takes its place, though the picturesque effect is usually due to

* Some extracts from a public lecture on "Beauty in Architecture," delivered in the Firth Hall at the University of Sheffield, by Mr. W. S. Purchon, A.R.I.B.A., on November 16.

gradual growth rather than to conscious design.

And while the front of the Parthenon is symmetrical, the spaces between the columns differ, and the columns in the back row are not exactly behind those in front. Such an arrangement gives a subtle rhythm, which adds greatly to the beauty of the building, and makes an equally spaced portico look dull in comparison.

In much the same way the beautiful front of Inigo Jones' Banqueting Hall in Whitehall gains much by having its front divided into three parts, of which the central one is larger than either of the other two.

Proportion and Scale.

Proportion and scale are terms frequently used in architectural criticism, and frequently misunderstood. Proportion is a relative matter, the harmonising of the shapes of the different forms with each other and with the whole. For instance, in this charming building (Morden College) the flat form of gable or pediment is in proportion to the rest of the building, fitting in well with its shape and horizontal treatment. At the same time, the steep gable of this beautiful church (Patrington) is in proportion to the rest of the building. Again, a tall, narrow window will be a good proportion for one position, as in this church, and a long flat one in another, as in this delightful example of domestic work at Colley Weston.

A building is said to be designed on a large scale when its parts are few and large compared with the whole building. The Old Clarendon building at Oxford is an example of this. The "grand manner" is a term often applied to such a design. On the other hand, a large building may be frittered away by designing it on a small scale, covering its surface with a large number of small parts.

In small buildings, such as small houses, the scale should be small, or an appearance of pretentiousness results. This question of scale must be considered even in such apparent trifles as the sizes of stones in the walls, and of the panes of glass in the windows. A false scale may be, and often is, set up by substituting sheets of plate glass for the original small panes, as has been done in the principal windows of this charming house at Stamford. The attic windows are as they should be.

Strength.

Another extremely important quality in architecture is strength, which must be apparent as well as actual. The use of representations of human figures as supports is rarely successful. In this example, however, from the Erechtheum at Athens everything was done that could be done to give the figures the appearance of doing their work without difficulty.

That the Albert Memorial is really strong enough is more or less demonstrated by the fact that it has stood so long, yet one cannot help admiring the courage of those who go close to it (some were shown on the slide), for it looks as if it ought to collapse. It is held together by concealed ironwork, otherwise the arches would push out the angles.

Restraint.

As in other arts, the quality of restraint is of great importance. Ornament and sculpture should not be distributed evenly over a building, but concentrated on important points, such as the main entrance, the central gable or pediment, or the top of a tower. In doing this the ornament not only gains by contrast with a plain surface, but it strengthens the design by emphasising important features, which are thus made to arrest attention. The plain surface is so valuable; it is only the poor, weak designer who is afraid of it—the master knows its value.

The Proper Use of Materials.

So far I have dealt with shapes and forms and the appearance of things, and it might be inferred from what I have said that beauty in architecture is but skin-deep. This, however, is far from being the case; it must go right down into the very bones of the structure.

I have, for instance, said little or nothing as to the nature of the materials of which buildings are made. It is true there are those who hold that the form is the thing, and that it matters little of what it is constructed.

But in other arts it is a truism that a medium must not be strained, and as an etching is not at its best when it most nearly resembles an oil painting, and as a condensed novel rarely, if ever, makes a good short story, so each of the materials used in architecture has its own characteristics, making it most suitable for certain purposes. I give as an example a beautiful piece of Greek detail worked in a fine marble. In a coarser material a different type of ornament would be more suitable. Even some marbles are not suitable for the same purpose as others, for in the Temple of Neptune at Sunium the veins of the marble conflict with the effect of verticality given by the flutes.

Truth in Architecture.

And this brings me to the question of truth in architecture, for to be beautiful a building must be true; it must be genuine. In these beautiful old houses the genuine timber-work really supports the work above; much that is done nowadays consists of thin boards nailed to a wall.

And in similar fashion the various parts of a building should not be ashamed of themselves; they should look like what they are. The best is always got out of a feature by making it express its purpose. A column should be made to look—as indeed the Greeks made it look—as if it were supporting something; every line in the columns of this temple built by the Greeks about 2,400 years ago suggests the function of the column as a support.

A XIIIth-century capital suggests support, and support managed easily, but the wreath of ornament carved round later capitals—while possessing, it is true, distinct decorative value—does not express the function of the capital.

Similarly chimneys should be treated fearlessly as chimneys. They have often given the architect difficulty, probably because he was trying to use a style in which chimneys were not used originally. In such cases chimneys have been made to look like columns, as at Burghley House. It is a golden rule in architecture to make a virtue of necessity. If a difficulty arises, it should be turned into an opportunity.

The west front of Beverley Minster is in many ways a fine piece of work. Unfortunately the gable in the middle is much flatter than the steep roof behind—it is not a legitimate piece of design.

In all great architecture the construction is not concealed. The Greek gloried in his column and lintel, the Roman in his arch and vault, and the mediæval builder in his vault and buttresses. The cathedral builder, for instance, was not only not ashamed of his methods of construction, but he drew attention to them, bringing shafts down the piers to draw the eye up to the vaulting, as in the chapter house at Wells Cathedral, and making features of his flying buttresses, as in the exterior of the cathedral at Amiens. In this way is architecture made real and vital. All great architecture, in fact, must be a beautiful expression of construction, and as new methods of construction are adopted it does not do to conceal them under ancient forms.

Expression of Purpose.

And under this head of truth may also be mentioned the undoubted fact that a building to be beautiful must express its purpose. For Amiens Cathedral as a cathedral is beautiful, but as a hospital it would be foolish. That is, of course, an extreme case, but the same principle applies, if in a lesser degree, to less extreme cases.

Old Newgate Prison—one of the finest buildings we had in England, now unfortunately pulled down—was a fine example of a building expressing its purpose. The other day a little boy passing one of the important buildings in a great manufacturing city was heard to ask his father, "Is it a picture palace?" I do not think he would have asked that question had he been passing grim Old Newgate.

A house should look like a house; it should suggest the home, not the municipal building. This building at Stamford, for example, is a charming specimen of home-like architecture, small in scale, quiet, and restful. And this reminds one that architecture is not only a matter of cathedrals and town halls, for the house or cottage may be beautiful, too.

The Claims of Utility.

On no account should convenience be sacrificed to external appearance; the latter must be a natural development from the uses to which the various parts of a building are put.

In many houses of the XVIIIth century in England, in order to obtain a finely-balanced exterior, the kitchens were placed in a subordinate wing balanced on the other side by, say, a block of stables.

On the other hand, the convenience of a house has often been sacrificed to obtain an irregular or picturesque outline. Symmetry or picturesqueness obtained in such a manner is, however, entirely false.

The claims of utility and convenience can, however, be pushed to an unreasonable extent. Some shop-keepers, for instance, desire a shop front in which there are no visible supports, so that we get as a result the terrible spectacle of a great building apparently resting on a sheet of plate glass. The provision of adequate visible support cannot, I think, conflict with the reasonable claims of utility, and some shop-keepers are beginning to see the value of beauty in their buildings. In Debenham's shop in London, for instance, an attempt has been made to treat a shop in a dignified manner. Of course, there are shop-keepers who would say that even these supports are just so much wasted window space. Selfridge's stores is another example. Possibly one may not like it, but one is bound to admit that it is a serious attempt to deal with a difficult but interesting problem—a problem which is raising a good deal of discussion in connexion with the rebuilding of Regent-street Quadrant.

Suitability to Environment.

A building to be beautiful must be suitable to its environment. One frequently sees a house or other building, which, while perhaps very suitable for another position, is quite unsuitable, and consequently lacking in beauty where it is.

Built in a somewhat bleak position amongst the hills one sometimes finds a modern house which might well have been erected in the Thames Valley, while probably close at hand is a charming old farmhouse exactly suiting its surroundings. Such, for example, are several of the old farmhouses and halls within a few miles of Sheffield, simple, unaffected, entirely suitable for their position, and altogether delightful.

Other buildings, far exceeding in number all the others, are suitable to no environment with which I am familiar. I refer to the dreary streets composed of houses of uniform ugliness, which form such a large part of many of our towns, and which have made such inroads into the pleasant lands surrounding them. Too many of these houses are also inconvenient, and more or less insanitary and dangerous.

Influence of Climate.

In this same connexion the direct influence of climate on architectural design may well be noted. Under the bright suns of Greece we find strikingly refined detail, depending for its execution, as we have seen, on a beautiful marble. Open porticoes and colonnades are also to be found here as in other sunny climates, together with flat, broadly overhanging roofs and comparatively small windows. In more northern countries steeper roofs and larger windows are more suitable, as shown, for example, in the east end of Beverley Minster, and details to be satisfactory must be bolder. The vigorous detail in the corbel of the Percy Tomb, Beverley Minster, is much coarser than good Greek detail, and has much stronger effects of light and shade, and is therefore more suitable for the climate in which it was made. Just as Greek detail is more beautiful in Greece than in England, so is this detail more beautiful here than it would be in Greece.

During the early part of the last century many buildings were erected in England, copying as closely as possible the buildings of ancient Greece, regardless of the fact that they were quite unsuitable for our climate.

There was also a Gothic revival, leading to the erection of buildings copying as closely as possible those of the Middle Ages, regardless of the fact that the habits of the people had

quite changed. Even worse is the attempt sometimes made to reproduce not only the form of the old work, but even its dilapidated appearance.

And now the question of the style to be adopted in the new buildings for Delhi has arisen, and many letters about it have been written to the Press. Should the buildings be on the lines of existing Hindoo buildings, or should we build in our English style in India, as Rome gave her architecture to the countries she conquered (with the exception of Egypt)? One writer has suggested that the modern English style should be used, but modified to suit the climate—a suggestion which reminds one that an increasing number of English buildings are on lines more suitable to a hot climate than our own.

But in all buildings, whether in England, India, or elsewhere, the first consideration should be the fulfilling of the reasonable needs of those who are to use the building, and full attention must be paid to such sanitary requirements as the provision of adequate air space, window space, and means of ventilation. The architectural treatment must be developed out of these requirements. It must be made suitable to the environment, and due attention should be paid to such qualities as those with which I have briefly dealt.

Buckingham Palace.

I should now like to draw attention to the proposed remodelling of the front of Buckingham Palace. The present front was unfortunately carried out in a material unsuitable to the climate, and as a result has had to be painted—a process which always leaves stonework dull and uninteresting. Apart from this, the old front is not really so bad as it is generally supposed to be. The new design is quite good. The architect, Sir Aston Webb, was not given a free hand; he had to work to the existing position of all the openings, and under the circumstances he has done well.

It may be thought, and I know it is thought, that his design is rather ordinary; this because it is broad, quiet, restrained, and dignified. The three main masses are strongly treated; there is no doubt about the greater importance of the central one. The strongly-marked horizontal joints in the lower story suggest strength, the columns and pilasters impart the necessary air of dignity, and the small amount of ornament which is used is applied in just the right places. Given a free hand, it would have been better, I think, to have abandoned the central feature, and so have given the monument in the front a still quieter background.

While I have not given a formula for beauty in architecture, we have seen, I think, that it depends on several things, some of them matters of external appearance, such as the proper arrangements of the main masses, and the tying together of the various parts so as to give unity to the composition, and the concentration of ornament, but others going right down into the very core of the building, and dealing with the materials of which it is made, the uses to which it is to be put, its construction, and the welfare of the people who are using it. We have also seen that what is beautiful in one place is not necessarily so in another.

Our Relationship to Architecture.

And what, we may ask, should be our relationship to this architecture—this beautiful building? Is it something about which we are to read or talk? Or is it something to see which we are to travel long distances? Is it not rather that which we, as dwellers in a city, should see all about us, in our public buildings, in our shops, in our factories—even in our homes?

It may perhaps be difficult to light the lamp of beauty in the special climatic conditions which prevail in a manufacturing city.

I have spoken of making a building suitable to the climate. For the present climate of Sheffield glazed ware is perhaps the best material, as it can be washed down at frequent intervals. And glazed ware, though it is usually ugly, need not be so. One usually associates it with crude colouring and ugly ornament, but it can be treated beautifully, and used with charming effect.

But I have heard it suggested that the Sheffield atmosphere can be improved, and I should not be surprised to find that that is not beyond our skill in these days of engineering efficiency, and I think most of us would welcome such an improvement.

Would it not be worth much to us if our city were really a beautiful one? Let us think for a moment what a beautiful city means, a city free from shams and ugliness—a city in which all the streets and buildings would be pleasing to the eye and mind.

The present visitor to Sheffield, when asked how he likes it, invariably answers: "The country around it is beautiful."

Will the visitor of the future ever be able to answer: "It is a beautiful city with beautiful surroundings?"

Is this an impossible ideal?

It is not impossible; it needs chiefly on the part of the people a great love of and a great desire for the beautiful.

Professor Lethaby tells us that when the cathedrals were built the people were as concerned about them as we are about cricket. When we, as a people, are as interested in the beauty of our buildings as we are in sport we shall not tolerate ugly cities. Street improvements will no longer be considered only as problems of traffic, sewers, and water mains, and the builder of a private house will remember that it is not only for the comfort of himself and his family, but that it is something which will give either offence or pleasure to countless passers by.

And this state of things is slowly but surely coming. Already large numbers of people are becoming interested in such questions as town planning and the provision of garden suburbs, and incidentally in beautiful buildings.

I think the time is not so very remote when people, reading of our times, will wonder, not so much at our remarkable developments in engineering and other science, but rather that we could have been persuaded to put up with so much totally unnecessary ugliness.

ROYAL ACADEMY SCHOOLS.

THE evening of December 10 was occupied as usual by the distribution of prizes to students at the Royal Academy. Sir Edward J. Poynter, Bart., P.R.A., was in the Chair, and announced the following awards:—

Landscape painting—"In an Orchard," Creswick prize (25*l.*) and silver medal to Evelyn Muriel Young; extra prize (5*l.*) to Una Hook.

Design for the decoration of a portion of a public building—"Romans Disembarking Slaves," first prize (30*l.*) and silver medal to James Williams; second prize (10*l.*) and bronze medal to Gerald Leslie Brockhurst.

Design in monochrome for a figure picture—"Joseph's Brethren Bringing the Coat of Many Colours to Jacob, Genesis, Chap. xxxvii. 31-32," Armitage prizes, first (30*l.*) and silver medal to Horace Edward Quick; second prize (10*l.*) and bronze medal to Hilda Marion Hechle.

Composition in colour, prize (10*l.*) and silver medal to Florence Margaret Walden.

Cartoon of a draped figure—"An Orator: To be Treated Classically," prize (25*l.*) and silver medal, not awarded.

Two paintings of a figure from the life, first prize (10*l.*) and silver medal, not awarded; second prize, bronze medal, to Robert John Swan.

Two paintings of a head from the life, first prize (5*l.*) and silver medal, not awarded; second prize, bronze medal, to Florence Margaret Walden.

Perspective drawing in outline (open to painters and sculptors only)—"The Bromley Palace Room in the Victoria and Albert Museum," prize (5*l.*) and silver medal, no competition.

Set of four drawings of a figure from the life, first prize (15*l.*) and silver medal to Horace Edward Quick; second prize (10*l.*) and bronze medal to Hilary F. Cleveland Skinner.

Set of three studies of drapery, silver medal to Hilda Marion Hechle.

Drawing from the antique, prize (5*l.*) and silver medal to Nancy Wordsworth Arnold.

Painting from still life, prize (5*l.*) and silver medal to Sylvia Ellen Gaunlett.

Model of a design—"Sisera and Jael, Judges, Chap. iv. 17-21," first prize (30*l.*) and silver medal to Alfred Henry Wilkinson: second prize (10*l.*) and bronze medal to Joseph Herman Cawthra.

Two models of a bust from the life, first prize, silver medal, not awarded: second prize, bronze medal, to Alfred Henry Wilkinson.

Model from the antique, prize (5*l.*) and silver medal to Allen Howes.

Design containing figure and ornament—"Gathering Grapes: The Vine to be Treated Ornamentally," prize (5*l.*) and silver medal not awarded.

Set of three models of a figure from the life, first prize (15*l.*) and silver medal to Allen Howes; second prize (10*l.*) and bronze medal to Peter Induni.

Design in architecture—"An Entirely Detached Town Residence for a Nobleman in a Capital City Overlooking a Public Park on its West Side," Travelling Studentship (England), 60*l.*, tenable for one year, to Oliver Frederick Savege.

Set of architectural drawings, first prize, silver medal, Augustus Gaffett Bryett.

An architectural design—"The West Front of St. Martin's-in-the-Fields, including the Tower and One Return Bay," prize (20*l.*) and silver medal to Charles Frederick Butt.

An architectural design (First Term students only), first prize (15*l.*) and silver medal to Geoffrey P. Agnew Fildes; second prize (10*l.*) and bronze medal to William Henry Hamlyn.

Perspective drawing in outline (open to architects only)—"The East End of St. Martin's-in-the-Fields," silver medal to Walter Llewellyn Clark.

Original composition in ornament (open to architects only), prize (5*l.*) and silver medal to Harold Thomas B. Barnard.

Architectural design with coloured decoration—"One Bay of a Hall for a City Company or Guild," 5*l.* and silver medal to Augustus Gaffett Bryett.

Landseer scholarships in painting and sculpture, of 40*l.* a year each, tenable for two years, have been awarded:—In painting to Horace E. Quick and Douglas S. Gray; in sculpture to Alexander Stiles and Allen E. Howes.

THE COST OF SCHOOLS.

THE *Times*, in an article on Local Administration, gives some interesting particulars of the cost of recent school buildings in various parts of the country.

At Maltby, near Doncaster, a school building for 1,000 children has been erected round a quadrangle which is to be utilised for open-air instruction. Flat roofs are a feature of the school, the cost of which works out at 10*l.* 2s. a head, or 11*l.* 3s. inclusive of the site.

The Brighton Education Committee have recently erected a school for 620 children in classrooms of fifty, each classroom with external walls, two verandahs connecting the classrooms. A special feature has been made of ventilation and lighting, and the accommodation includes a large hall, 45 ft. by 26 ft., and hot and cold shower-baths. The cost of the whole works out at 14*l.* 1s. 8d. exclusive of the site. It is stated to be the first school of the kind in the South of England.

The cost of schools of this new type is said to compare favourably with that of those of the older type schools recently erected in Bedfordshire, ranging from 9*l.* 8s. to 14*l.* per head, the most recent of those in West Ham from 23*l.* 4s. 7d. including or 21*l.* 10s. excluding site; while in Middlesex the cost ranges from 11*l.* 4s. 7d. a head for a school for 160 children to 16*l.* 10s. a head for one whose accommodation is 1,143, both exclusive of sites. The average cost of schools in Durham during the years 1910 and 1911 has been 12*l.* 13s. 10d. inclusive of site.

On the strength of the above figures it would appear that the cost of the more modern type of school need not exceed that of the former type, while they possess very great hygienic advantages.

The National Education Association at their meeting in November were unanimous in expressing their opinion that localities could not do all that was needed without additional central grants.

MODERN STAINED GLASS.

Mr. Christopher Whall has had on exhibition a very fine new window for the Parish Church of Melrose. His windows at Gloucester and Canterbury Cathedrals are well known. The practice of obtaining effects by etching out the ruby from "flashed" glass has been used with a brilliant effect, while those who are familiar with Mr. E. S. Prior's quarries, which have here been plentifully employed, will realise their decorative value. Twenty years ago the possibility of glass manufacture as quarries instead of sheets or tables came as a surprise, and the qualities thus attained, in the first instance, we believe, by a glass-maker named Rust, are incomparable in the treatment of glass windows considered as mosaic.

GENERAL NEWS.

The Christmas Holidays.

The week after next the *Builder* will be published on Tuesday, the 24th inst., and to ensure attention all communications for the Editor must reach our office by the *first post on Monday*, the 23rd.

Professional Announcement.

Mr. Hugh Spencer Stowell, architect and surveyor, has removed to 151, Grosvenor-road, S.W.

Appointments.

A surveyor to St. Bartholomew's Hospital will be appointed early in January. Particulars of the appointment may be obtained from the Clerk to the Governors. Candidates must be members of the Royal Institute of British Architects, or of the Society of Architects, or of the Surveyors' Institution.

Mr. Alexander Burnett Brown has been appointed by the Governors of Charterhouse as Surveyor of the Charterhouse London Estates in succession to the late Mr. E. B. I'Anson.

The Portico, St. Martin's-le-Grand.

It is stated that the Committee of St. Chad's Hall, a hall appertaining to Durham University, have made application to H.M.'s Office of Works for the stones of the portico of the (old) General Post Office, with the object of incorporating the order in their new buildings.

Planning of Delhi.

In the House of Commons last week Mr. King asked the representative of the Secretary of State for India whether the Committee sent out to report on the building of the new Delhi was informed that a particular architect had been selected to submit plans for the new Government buildings; and, if so, if the name of the architect would be stated.

Mr. Baker said the answer was in the negative.

Mr. King asked whether any architect had yet been selected to design the Government House in the new Delhi, and if so whether any particular style of architecture had been imposed upon or selected by him for the proposed building.

Mr. Baker: No selection has yet been made.

Mr. King then asked if the India Office had consulted another architect besides Mr. Lutyens on the planning of the public buildings of the new Delhi.

Mr. Baker: The India Office has not consulted any architect about the planning and designing of the public building of new Delhi, and no decision has been come to how and by whom they will be carried out.

Mr. King further asked whether a London journal published last July what purported to be a summary of the preliminary report of the expert Committee which went out to Delhi to report on the planning of the new part of that city; whether its publication was authorised by the India Office; and whether in future official reports, the full text of which was withheld, would be imparted to the public in this manner.

Mr. H. Baker: The newspaper article to which the hon. member presumably refers was not authorised by nor were the materials supplied by the India Office. The information which it contained with regard to the alternative sites for the new Delhi and to the views of the Town Planning Committee seems to have been generally known in India.

Mr. King addressed some further questions to the Secretary for India on Tuesday regarding the architecture of new Delhi, and

Mr. H. Baker replied that Mr. H. V. Lanchester was engaged to pay a visit to India as a consulting expert to advise as to the site for the new city, his expenses being paid by the India Office. The further question of the construction of the buildings had yet to be decided, and the Secretary of State at present was not prepared to make a statement on that point.

Mr. King asked if the Government of India and the India Office were aware that there was a traditional school of architects and building craftsmen in India, and whether their existence would be considered in commissioning architects and builders of the structures to be erected in the new Delhi.

Mr. H. Baker replied that the circumstances mentioned and all other relevant matters would be duly considered.

Westminster Hospital Site.

Replying to Sir H. Craik, Mr. Wedgwood Benn stated that Westminster Hospital site could not be used for any other purpose than that of a hospital without the consent of the Crown, and there were various restrictions as to buildings. The Government had the subject under consideration as to, in the event of the removal of the hospital, their power being exercised in order to secure that the site should be used in a manner suitable to the dignity of the situation.

Royal Free Hospital, W.C.

A fund is opened for an extension of the buildings and the erection of a new out-patients' department, at an estimated outlay of some 50,000*l.* The governors have bought 1½ acres of adjoining land at the rear of Messrs. William Cubitt & Co.'s premises. The hospital was founded by Dr. Marsden in 1828 in Greville-street, Hatton-garden, and in 1843 was removed to the barracks in Gray's Inn-road, of the City Light Horse Volunteers, of which the old (stables) front remained until twenty years ago. The north, or Duke of Sussex, wing was rebuilt in 1855, the south and east blocks in 1877–9. The later administration blocks, with isolation ward and staff quarters, standing on the site of the original front, were erected in 1894, after designs by, we gather, Mr. William Harvey.

The Artists' Guild.

A preliminary meeting was held in June last at 79, West Cromwell-road, W., to consider the advisability of forming a Guild of Artists on a religious basis, to include both men and women "whose main work is any branch of art." At St. Paul's Chapter House on November 8 a number of musicians, painters, and craftsmen assembled and formed the Guild. The Bishop of Winchester was elected and has agreed to become President of the first year.

The chair was taken by Mr. Walter Ford, who gave an address which set forth the object of the Guild. He said there were many religious people who have no belief in art; there were more artists who have no belief in religion. Those who met to inaugurate this Guild were able to believe in both. This Guild of Artists, as was demonstrated at the meeting held in June, felt that it was truer wisdom to start as a smaller body with strong principles than as a larger body with weak ones. The Guild, then, sought to unite in a common society those artists who believe in the Christian faith and who find in it an inspiration for their life and for their art, which is their life's work. The Hon. Secretary is Miss M. C. M. Bergman, 107, Goldhurst-terrace, South Hampstead, N.W.

Leeds Training College.

This great building, which has been erected at a cost of 242,000*l.*, in spite of the protests of "indignant ratepayers," has now been opened. It is built from a design selected in a local competition by Sir Aston Webb, R.A. The Government grant is unusually large, amounting to 75 per cent. of the cost of building, and equipment and maintenance grants of 53*l.* per annum for each man and 38*l.* per annum for each woman student. With this financial aid and the annual fees of 20*l.* the college will be self-supporting as long as it is full, which, judging by statistics, is a certainty. The college is designed after a careful study of Continental and other models, and will serve a wide area without costing the ratepayers of Leeds anything—a prospect with which the Committee may well feel satisfied.

The Royal Sanitary Institute.

At an examination in sanitary science as applied to buildings and public works, held at London on December 6 and 7, twenty-two candidates presented themselves. The following nine candidates were granted certificates:—E. G. Shaw Cranfield, East Sheen; P. F. Gosling, East Dulwich; W. H. Hall, Finsbury Park; Jagtap, Balkrishna, Piraji, Westminster; W. E. Masters, Dulwich; G. J. Rees, Ystalyfera; E. Weeks, Oxted; A. White, Bulford Camp; R. K. Wortley, Brighton.

BOOKS.

Old Houses and Village Buildings in East Anglia, Norfolk, Suffolk, and Essex. By BASIL OLIVER. Illustrated by collotype plates from photographs specially taken by Horace Dan, Sydney A. Driver, and others, with numerous illustrations in the text. (B. T. Batsford. 21s. net.)

IT would seem that England even now is an almost inexhaustible treasure-house. As one corner of our land after another is scoured by the observant seeker for the handiwork of bygone days it is truly remarkable what stores are waiting to be disclosed, and when the chronicling of them is entrusted to the hands of men skilled in the use of pen, pencil, and camera the result cannot fail to be most fascinating. At some time or another each part of England has had its tide of prosperity; the ebb may have flowed, but not without leaving its landmarks in the churches and in the houses both great and small which were set up in almost countless numbers by a prosperous and thankful people. In Tudor times the commerce and industry of East Anglia were at their zenith; the constant intercourse with Flanders and the influx of Flemish weavers and workers in all manner of crafts from France, Germany, and Italy, and particularly from the Low Countries, gave a wonderful impetus to the building arts in the three counties under consideration just at a time when the native traditions were sufficiently vigorous to reject any opposing innovations, but not so persistent that fresh ideas and new methods of workmanship should not be accepted. Indeed, they were incorporated so nicely that it is often difficult to say where native tradition ends and where foreign influence begins. But as one turns over the plates in this delightful book one is reminded again and again of the crow-stepped gable so general in the Low Countries and so rare elsewhere on this side of the Channel south of the Tweed. We notice many a little touch in the shaping of metal and wood and plaster, and in the treatment of brickwork which betrays the hand of the foreigner. Nevertheless, the work as a whole always bears the stamp of the English builder; it was made from materials native to the soil, and met the needs of the English people and the climate of our land in a workmanlike and sensible manner, showing the power of the Englishman to do what was required of him under all conditions.

The book is the fifth of a well-known series on "Old Cottages and Farmhouses," and does not attempt to deal with the larger manor-houses and country seats, most of which have been illustrated elsewhere, but is limited to the smaller and little-known domestic buildings which, from their modest dimensions and secluded positions, are in danger of being forgotten and of disappearing, from one cause and another, before any permanent record has been made of them. An immense amount of good and beautiful work has already been lost owing to the neglect and apathy of those in whose keeping it has been, while anyone who has travelled about the country knows what incalculable harm has been done by unsympathetic "restorations." Interiors of houses have suffered even more than the exteriors, and the two views of "Upper Chambers" at Alston Court, Nayland (Plate XVII.), and "Giffords Hall, near Winchambrook" (Plate XIX.), are especially welcome. If these books did no more than record they would have served their purpose, but they do a great deal more—they stimulate interest in those who are responsible for the upkeep of old buildings, and they are a source of inspiration to those engaged in designing and carrying out new work. Although the collotype plates are the main feature of such a book as this, the letterpress is indispensable, and the many plans and sketches of constructive and decorative detail, drawn direct from the buildings which form the subjects of the plates, are valuable to the architect and craftsman.

Timber-framed buildings naturally figure prominently, but in Essex especially these were often treated externally with plaster, and the examples of pargetting and the various patterns are eminently suggestive for modern work. Brickwork, stone and flint, and weather-boarded and tile-hung buildings are all illustrated, while the windmills, which were once so plentiful in the Eastern Counties, are represented by five examples, and one of these has been blown down since the photograph was taken. Having regard to the scope of the book, it will be found to comprise typical work in all the materials in use from the latter part of the XVth to the beginning of the XVIIIth century; it is admirably produced and is a fine contribution to the series to which it belongs.

Brasses. By J. S. M. WARD, B.A., F.R.Hist.S. (Cambridge University Press. 1912. 1s. net.)

THE appearance of this little book comes opportunely at a time of increasing general

interest in the subject of which it treats. This country contains even now a far larger number of monumental brasses than any other in the world, and but for vandalism in the past would possess ten times as many. England may therefore in a sense be regarded as the home of this form of art, although the custom of engraving brasses as monuments to deceased persons was originally introduced, probably very early in the XIIIth century, from the Continent; and for this reason, as well as for the historic interest attaching to these memorials of long past worthies, and the contemporary evidence they afford on the armour, dress, and social conditions of mediæval times, sepulchral brasses are deserving of careful study. The developments through which English architecture passed during the five centuries of continuance of this art—which phases are faithfully reflected in the architectural adjuncts represented on monumental brasses—add still further to the interest of the latter.

Unfortunately no cheap popular handbook has hitherto been available for the use of intelligent visitors to our parish churches and college chapels, where the greater number of monumental brasses is to be found. We therefore welcome the advent of this little volume as a means of popularising a fascinating branch of historical art. The author comes well equipped for his task, and careful perusal of his work convinces us that he is no mere compiler, but has intimate first-hand knowledge of his subject.

Mr. Ward departs from the usual method of previous writers by treating his subject strictly in chronological sequence instead of grouping brasses into military, clerical, civilian, ladies', etc. Thus, commencing with the earliest extant brass in this country, that at Stoke d'Abernon in Surrey (1277), he devotes Chapter I. to a general consideration of those brasses which were laid down during the reigns of the first two Edwards (1272–1327), whether representing knights and their ladies, priests, or civilians, and whether exhibiting architectural accessories or not; and succeeding chapters carry on the story to successively later times. There is much to recommend this method of treatment from the historical point of view, although it is attended with certain practical inconveniences, which the author evidently realises, for in Chapters V. and VI. he departs to some extent from his own arrangement by intercalating a detailed account of clerical vestments and monastic garb as depicted on mediæval brasses, resuming his historical sequence in Chapter VII. There is, however, some justification for this, as the dress of clerics varied very little, if at all, during the whole of pre-Reformation times.

Brass. William Grevel and Wife, 1401.

Later chapters discuss special types of brasses, and in Chapter XIV. the author gives a detailed description of the architectural features, as canopies and brackets, associated with the engraved effigies. In the concluding chapter some useful practical hints are given to those who contemplate taking up brass-rubbing as a hobby.

A valuable feature is an appendix, giving a list of brasses of each period and class described; and a bibliography is added which includes most of the important works on the subject published since the commencement of the last century.

The work is well illustrated by reproductions of rubbings and engravings of well-known brasses, one of which we reproduce by favour of the publishers.

We can recommend this manual to all desirous of gaining an insight into a very interesting branch of our native art.

BOOKS RECEIVED.

LONDON TOPOGRAPHICAL RECORD. (London: The London Topographical Society.)

COMMON BATTERY TELEPHONY SIMPLIFIED. By Walter Atkins. (London: The *Electrician* Printing and Publishing Company, Ltd. 3s. net.)

SOUTH KENSINGTON AND ITS ART TRAINING. By F. P. Brown, A.R.C.A. (London: Longmans & Co. 3s. 6d. net.)

ESTIMATING FOR REINFORCED CONCRETE WORK. By T. E. Coleman. (London: B. T. Batsford. 4s. net.)

THE PRACTICE OF ELECTRICAL WIRING. By D. S. Munro. (London: H. Alabaster, Gatehouse, & Co. 3s. net.)

MAGAZINES AND REVIEWS.

THE *Burlington Magazine* devotes its pages this month for the most part to literary art. Duccio, of Sienna, is a notable figure in the Italian school of painting, and an illustrated article is devoted to a consideration of his work. An illustrious Frenchman said of David that if he were not an important painter, he was at least very important to France, and the same may be said of Duccio with regard to Siennese Art. Another article describes a porphyry figure lately discovered at Ravenna. It belongs to the school of Alexandria—quite the most unattractive of the Greek colonial types. The drapery is arranged with dreary formality. That the sculptures of Chartres and Wells successfully escaped this type of traditional influence puts an increased estimate on their value. Mr. Aymer Vallance continues his well-illustrated review of Early Furniture, while some reproductions of fine Italian medals cause us to wonder anew at the exhibition presented by our modern coinage. The Victorian penny, bearing the superscription of Wyon, is nowadays something to be treasured.

The *Connoisseur* again considers mezzotint portraits, with further examples from the illustrious engravers of the XVIIIth century, including one by T. Watson after "Wright of Derby." The work of this painter, who is represented in the National Gallery by the "Experiment with the Air Pump," lends itself to the rich contrasts of light and shadow obtainable by mezzotint. "The Orrery," engraved by Wm. Pether, represents perhaps the most important of Wright's striking effects of chiaroscuro.

The *American Architect* gives plans and elevations of one of those well-arranged libraries for which America is distinguished. It is the Avery Library, Columbia University, New York, designed by Messrs. McKim, Mead, & White.

Moderne Bauformen (Stuttgart) illustrates some modern architecture in Germany and Austria. We notice those tendencies toward *l'art nouveau* which we are accustomed to look for in much of the Continental design, but there is much also that is pleasing, particularly in the example of a mansion at Stuttgart.

Architektonische Rundschau has devoted itself to styles that are more traditional. Some illustrations of garden-city cottages at Bremen are both interesting and attractive. The basement floor is still largely adhered to in Germany, which, while it greatly simplifies the ground plan, multiplies the staircases, which are further added to by a second floor in the examples given.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday, in the County Hall, Spring-gardens, S.W., Lord Cheylesmore, Chairman, presiding.

Loans.—The Finance Committee recommended that loans be made to local bodies, as follows:—Hackney Borough Council, 1,000*l.*, for footway paving; Wandsworth Borough Council, 3,100*l.*, for street widenings; and the Guardians of Mile End Old Town, 11,792*l.*, for poor law purposes.

Marble Arch Tramway Scheme.—The Finance Committee, in presenting a report dealing with the various stages of this scheme, stated that they were of opinion that it was unwise for the Council to incur the heavy expenditure involved by the present scheme, more especially as it was for a line which would be practically isolated, and would thus form no connected part of the Council's general tramways system. The Committee's report was adopted, and the scheme abandoned.

St. Paul's Bridge.—Various reports were presented dealing with the Tramways, Trolley, Vehicles and Improvements Bill, and it was agreed to introduce the Bill in the next session of Parliament. The Bill provides for a double line of tramways from Southwark-street over the proposed St. Paul's Bridge and through a new subway passing under Cannon-street and St. Paul's Churchyard to the north-western end of Cheapside.

Theatres, etc.—The Theatres and Music Halls Committee have approved of the following drawings:—Bow-road (late Bow and Bromley Institute), arrangement of the cinematograph enclosure; 3 and 4, Coventry-street (Globe Cinematograph Theatre and Restaurant), heating and ventilating arrangements; Downplace, Hammersmith (The Colisée), arrangement of the seating, etc.; 382-386, Edgware-road, separation of the basement from the hall above; 213, King-street, Hammersmith, arrangement of the gallery; London Palladium, provision of a removable platform in the orchestra space; 36, Tottenham-court-road, arrangement of the seating and the panelling; Piccadilly Hotel, temporary ballroom; Theatre de Luxe, 75, Balham High-road, rearrangement of balcony, seating, etc., and ventilating arrangements.

CORRESPONDENCE.

Should Names of Assessors be Known?

SIR,—The question of competition assessors which has been raised by Mr. Voysey with such characteristic pleasantry will be to good purpose if it serves to further the interests of the competing architects.

I consider that the announcement of the assessor's name as early as possible is of the utmost importance, and is likely to inspire confidence and lead to many joining in the competition who otherwise would not have done so. A good assessor, good conditions thoroughly considered in relation to questions of site and requirements, resulting in a clear course and a straight fight, can do nothing but good in securing a first-rate scheme and much educative instruction to novices, besides a good sporting chance into the bargain. What can be more stimulating, and who would question such an award or doubt the ruling, however much it might be contrary to personal predilections?

It is almost suggested that the announcement of the name of the assessor leads to playing up to his methods and characteristics. I believe such to be a negligible quantity, the exponent of that vice being more likely than not to be "hoist by his own petard"; and it is easy to see how this method of procedure is more likely to militate against success than to further it. Such devices do not produce good quality of planning or distinction of architectural treatment. Absolute confidence in the assessor should be paramount; while, on the other hand,

there should be as absolutely no ground for questioning the award; but who would? Alas, this is not always so! "Humanum est errare," and the best of intentions fail, sometimes unwittingly on the part of the promoters, or on the other as unwittingly in the appointment of an assessor. There should be no ground for such a condition of distrust in the interests of the competitors and the good of architecture in particular.

I see much to commend in the adoption of the jury system, although it must be admitted there are difficulties to be considered and overcome; but these surely would yield to conference. I have often wondered whether it would be possible for the Royal Institute of British Architects officially to undertake the assessing of all competitions. I say all because I would include the small competitions where the luxury and expense of the employment of an assessor is out of the question. Let the President of the R.I.B.A. be the official assessor; from a considered list of names a jury of three could be appointed, all assessor's fees being paid to the R.I.B.A., thus forming a fund for the new department. The jury would proceed to consider the competition under review in far less time, and with the combined wisdom and experience of two or three heads. In the case of difference of opinion, the President would give his vote or make a decision on a question of a final result. For this suitable fees and expenses could be provided of an amount to be agreed upon, possibly on scale. Provided that difficulties could be overcome, such as the relation to the promoters, together with the necessary technical knowledge necessary for the building in question, some scheme satisfactory to the profession could be evolved. What would result? Let us hope harmony and the general advancement of architecture.

Finally, from the educational point of view, in the interests of the promoters and for the advancement of our art, the premiated designs should be exhibited in the spacious galleries at Conduit-street.

WILLIAM A. PITE, F.R.I.B.A.

SIR,—Mr. Voysey's ideals are always high and command one's respect, and I am a little surprised that he should countenance competitions in any form. It is perfectly true that a competitor cannot help being influenced by the work of the approved assessor, who naturally must be biassed in favour of his own tendencies. I think, however, that Mr. Voysey exaggerates the danger of any design being very materially influenced in this way. The knowledge that the assessor will be a competent man, likely to recognise and give due consideration to any attempts at really fine work, far outweigh any drawbacks.

I understand that Mr. Voysey holds the opinion that English architecture ceased in the Tudor period, and it might need a genius of the very first order to resuscitate a style that would commend itself to him. It is hardly conceivable that any attempt will be made to design a building on any scale working from traditions, which ceased at such a period, but I believe that the attempt would be honestly considered if it could be reconciled with modern needs. The competition system will never give full opportunity to any man's powers, but at least it discovers competency of a kind, and it is always open to the successful candidate in consultation with his Committee to show his untrammelled conception of the most suitable design.

The British public does not yet care sufficiently about architecture even to be "imposed upon"; it accepts a building as a whole, as so much material turned to convenient uses. When it has learned to accuse an architect of "unfaithfulness" in style it will be a long way on towards the recovery of a natural style so desired by Mr. Voysey.

The tyranny of the assessor which he so deplores is nothing to the ignorance of the lay Committee, from which the profession has suffered so much. I would recommend Mr. Voysey to join forces with the Institute and urge them to deal drastically with the disloyalty of those members who enter promiscuous competitions with no assessor at all—this, in my opinion, is a much greater grievance.

P. MORLEY HORDER.

Teachers as Adjudicators.

SIR,—May I be allowed the opportunity to assure those concerned that I was glad to see the letter in your issue of the 29th ult. from Mr. Prestwich, which, of course, disposes of the fears I had expressed? The similarity between the designs was so striking that I was far from being alone in my suspicions, and it is a pleasure, therefore, to know that these drawings were actually the unaided work of the candidates.

Is it not, however, unfortunate that they should have been published as being works by students of the Liverpool School when it would appear from Mr. Prestwich's letter that he has not been a student for over two years?

The explanation this gentleman gives of the similarity of the designs I think strengthens considerably the opinion I advanced at the close of my last letter.

ALREADY AN ASSOCIATE.

Fire-Escape and the London County Council.

SIR,—Doubtless to some of your readers Mr. Edwin O. Sachs' recent letters on the above subject will appear to constitute a very strong indictment of the London County Council. While I hold no brief for this body, yet as a former member of its architectural staff, and as one who has given some little attention to the question of means of escape in case of fire, I desire in a few words to examine the justice of your correspondent's attack. Mr. Sachs addresses his letter from the offices of the British Fire Prevention Committee, and in this and other ways he conveys the impression that fire prevention and the provision of means of escape in case of fire are very similar things, and that the danger, from both these standpoints, increases with the populousness of a district. This is not, however, the case. The danger to property in consequence of an outbreak of fire is obviously greater in London than in a small town. But the risk to the occupants of a building in the event of fire is much less. In London the fire brigade, with their escape, are on the scene within a few minutes of the alarm. In an ordinary country town the arrival of the brigade can hardly take place in less than half an hour. In London escape to adjoining roofs is often possible. In a provincial town, where large buildings are frequently detached, such escape is generally not available.

The London County Council have now most drastic powers in regard to the requirement of means of escape from existing buildings, and, though there may be cause for criticism as regard the details of their policy, it will generally be conceded that, by putting these powers into force in a gradual manner, they are acting reasonably. And this especially so, having regard to the fact that no similar powers in reference to ordinary trade buildings which are not factories or workshops apply in provincial districts.

Mr. Sachs' sympathies with persons exposed to great risk, in the event of fire are, presumably, not confined within the bounds of the metropolitan area, and it would seem that the energy displayed by him in criticising the London County Council, who are shouldering these responsibilities, might be more advantageously employed in rousing the more lethargic authorities outside the metropolis to the need of an extension of their statutory powers. In London it is not now possible to put up an important building without providing reasonable means of escape in case of fire. In provincial districts, where the danger to life in the event of fire is greater, a person may still propose to erect a new building which is a veritable death-trap, and if the building is not a public building, a factory, or a workshop, the local authority has no power to interfere.

HORACE CUBITT, A.R.I.B.A.

Wall Decorations.

SIR,—In your issue of November 29 Mr. Jennings remarks the paucity of good design in the productions of many of the present-day wallpaper manufacturers. His ideas are interesting, and his condemnatory criticism errs in its mildness. . . . The strongest arguments would be in favour of the contention that wall and other surfaces should be treated by the craftsman-decorator without the intervention of the paper-printer. This is the goal to which all craftsmen's efforts should be directed.

Wallpapers are almost unknown in some European countries, and English people return from abroad impressed with the beautiful interiors they have seen and wondering at our own supineness in this respect. The reason for this superiority of the foreigner is that the handicraftsman has every encouragement given him to put on record the fruits of his skill and experience. . . . In place of paperhangings, with all their insanitary accompaniments, walls might be treated with paint or distemper, and some personal ideas or suggestions of the client could be embodied in a stencil, with a finished effect in design, broken colour, etc., quite as good or superior to any block-printed paper, not more costly and infinitely more permanent. A coalition of decorators should be formed, and so provide work for those legitimately entitled to it. Architects do not exercise the great powers they possess in anything like the degree possible to them; if they would only take up the question a great improvement in the decorative requirements of the country would soon manifest itself.

GEO. REDFERN.

[**** Architects achieve more on the lines advocated by our correspondent than he appears to realise. We should welcome the views of readers on the points he raises.—ED.]

The Trade Disputes Act.

SIR,—The judgment in the case of Vacher & Son *v.* the London Society of Compositors, deciding that no action for libel against a trade union can be entertained by any Court, has served a very useful purpose by removing any doubt as to the extent of the immunities conferred upon trade unions by the Trade Disputes Act, 1906.

By the Trade Union (No. 2) Bill, which is now before Parliament, the Government is deliberately extending the powers of the unions so that they may enter into trade and compete against others by wrongful means and yet carry the absolute immunities of the Trade Disputes Act; or they may run newspapers and libel and slander all who cross their path and yet leave their victims without redress. How powerful this weapon will be in contested elections or trade disputes is easy to imagine.

The judgment will be welcomed by all who had previously recognised the need for an alteration in the law. The first step towards a cure is to diagnose the disease rightly, and now that this has been so ably done by the Law Lords the politicians cannot long be allowed to shirk their duty.

The danger is that in finding a remedy there may be some inclination to go too far and so create an injustice on the other side.

I would therefore call the attention of your readers to a Bill which has been prepared by the Committee of the British Constitution Association (copies of which can be obtained from their office, 11, Tothill-street, S.W.), and which has been introduced into Parliament by Lord Robert Cecil. This Bill relieves the unions funds from liability for unauthorised acts of their members and others only when such acts are effectively repudiated by the managing committee. Again, while allowing the unions all reasonable latitude for carrying out their objects in accordance with their rules it prevents them from using their great power for the purpose of injuring others. So well does it attain to the happy medium that it has almost, if not entirely, disarmed criticism. The Parliamentary Committee of the Trade Union Congress attempted an attack upon it, but were quickly silenced.

W. V. OSBORNE.

11, *Tothill-street, S.W.*

BLOTTING PADS FOR 1913.

We have received specimens of the well-known Registered Date Indicating Blotting Pads which Messrs. Hudson & Kearns, Ltd., Stamford-street, S.E., produce, and which we are glad to welcome. We may draw special attention to the pads Nos. 7 and 8A, which appeal to us as being not only most serviceable, but as most sensible blotting pads and diaries.

BAYLISS PRIZE INSTITUTION OF CIVIL ENGINEERS.

Mr. H. Knowler, of the Borough Engineer and Surveyor's Department, Wimbledon, in the examination for Associate Members of the Institution of Civil Engineers, held last October, has been awarded by the Council of the Institution the Bayliss Prize, a distinction given to the student of the Institution who obtains the highest marks at the examination. There were over 150 candidates.

ILLUSTRATIONS.

Church of the Annunciation, W.

MR. WALTER TAPPER, F.R.I.B.A., is the architect of the Church of the Annunciation, Old Quebec-street, W., and his design, represented by the drawings by Mr. Charles Gascoyne, reproduced herewith, was shown at the Royal Academy Exhibition this year. The church is now in course of construction, the contractor being Mr. F. T. Chinchen, of Kensal Green.

St. Andrew's Hospital, Dollis-hill, N.W.

REFERENCE is made elsewhere (p. 717) to the new Catholic Hospital now in course of erection on Dollis-hill from the designs of Mr. Robert L. Curtis, and the illustrations on our plate are in connexion with the article.

MEETINGS.

SATURDAY, DECEMBER 14.

The Institution of Water Engineers.—Winter general meeting, at Burlington House, W. Mr. J. C. Thresh on "Some Recent Examples of Pollution of Public Water Supplies"; Mr. E. J. Silcock on "The Valuation of Water Undertakings on Transfer to Local Authorities"; and Mr. Adolph Kemma on "Recent Advances in the Science of Water-Purification." 10.30 a.m.

MONDAY, DECEMBER 16.

The Royal Institute of British Architects—Mr. Horace Porter, M.A., on "The Walls of Visby, Gotland." 8 p.m.

The Surveyors' Institution.—Mr. M. C. Duchesne on "The Value and Marketing of English Timber." 5 p.m.

Liverpool Architectural Society.—Mr. Lawrence Weaver, F.S.A., on "Small Country Houses of To-Day." 6 p.m.

The Institute of Sanitary Engineers.—Mr. J. O. Neumann on "The Collection of House and Trade Refuse." 8 p.m.

Royal Society of Arts (Cantor Lecture—III.).—Mr. C. R. Darling on "Methods of Econo nising Heat." 8 p.m.

The University of London (Victoria and Albert Museum).—Mr. Banister Fletcher on "French Mediæval Castles." 5 p.m.

TUESDAY, DECEMBER 17.

The University of London (British Museum).—Mr. Kaines Smith on "The Achievements of Art: The Life Principle." 4.30 p.m.

The Institution of Civil Engineers.—Mr. H. A. Humphrey, M.Inst.C.E., on "The Generation and Distribution of Producer-Gas in South Staffordshire." 8 p.m.

WEDNESDAY, DECEMBER 18.

Royal Society of Arts.—Mr. Joseph Pennell on "The Pictorial Possibilities of Work." Illustrated. 8 p.m.

The Auctioneers' and Estate Agents' Institute.—Mr. Horace Cubitt, A.R.I.B.A., on "The London Building Law and the Development of Property." 7.45 p.m.

Edinburgh Architectural Association.—Mr. Lawrence Weaver, F.S.A., on "Small Country Houses of To-Day." 8 p.m.

Nottingham Architectural Society.—Mr. T. Wright on "Examples of Pictorial Architecture and Miscellaneous Subjects." 8 p.m.

THURSDAY, DECEMBER 19.

The University of London (Imperial Institute-road).—Mr. Kaines Smith on "Review of Foregoing Lectures on Mediæval Decorative Art." 3.30 p.m.

The University of London (British Museum).—Mr. Banister Fletcher on "Greek Town Plans and Theatres." 4.30 p.m.

The Institution of Electrical Engineers.—Dr S. P. Thompson on "The Work of the International Electrotechnical Commission." 8 p.m.

FRIDAY, DECEMBER 20.

The Institution of Mechanical Engineers.—8 p.m.

COMPETITION NEWS.

A list of current Competitions is printed on page 730.

Barnet Workhouse Children's New Home.

At a recent meeting of the Guardians ten sets of plans for the Home proposed to be erected in Wellhouse-lane for the accommodation of the Workhouse children were considered, and a recommendation by a committee of the whole Board that premiums of twenty-five, fifteen, and ten guineas respectively should be awarded the authors of the three sets of plans marked "Economy," "Compactum," and "Fiat Lux" was adopted by eleven votes to eight.

Extension of Dunkerque.

The prize of one thousand francs offered for the best design for the enlargement of the City of Dunkerque (Nord) has been awarded to M. A. Agache.

Municipal Meeting House, Clichy.

A jury of no fewer than eleven members considered the designs submitted in the competition for "Une Maison Municipale de Réunions" at Clichy. There were several Town Councillors on the panel, but the professional side was strongly represented by architects nominated by the Préfet de la Seine, the Société des Architectes diplômés par le Gouvernement, the Société Centrale des Architectes, and by the competitors themselves. According to the report in a French newspaper, there were only fourteen designs, and after the process of elimination the first prize was given to the project of M. Guidetti.

ARCHITECTURAL SOCIETIES.

Glasgow Technical College Architectural Craftsmen's Society.

At a meeting of the Royal Technical College Architectural Craftsmen's Society, held in the Society's room within the College on Friday last week, Mr. A. F. Purdie presiding, Professor Charles Gourlay, B.Sc., A.R.I.B.A., F.S.A. Scotland, delivered a lecture, entitled "A Review of Byzantine and Italian Architecture," in which he outlined the history of Christian architecture in the near East and in Italy from the beginning of the IVth century until the end of the Renaissance period in Italy. After dealing with the Byzantine work in Constantinople and Salonika he treated of the Early Christian architecture of Rome, the work in Northern Italy, in which the influence of the Byzantine style is manifest, then the Romanesque, Gothic, and the Early Middle and late Renaissance architecture of Italy, both ecclesiastical and secular. The lecture was illustrated by a series of lantern slides, which enabled a good general understanding of the principles of design, composition, and details of the work under review to be obtained.

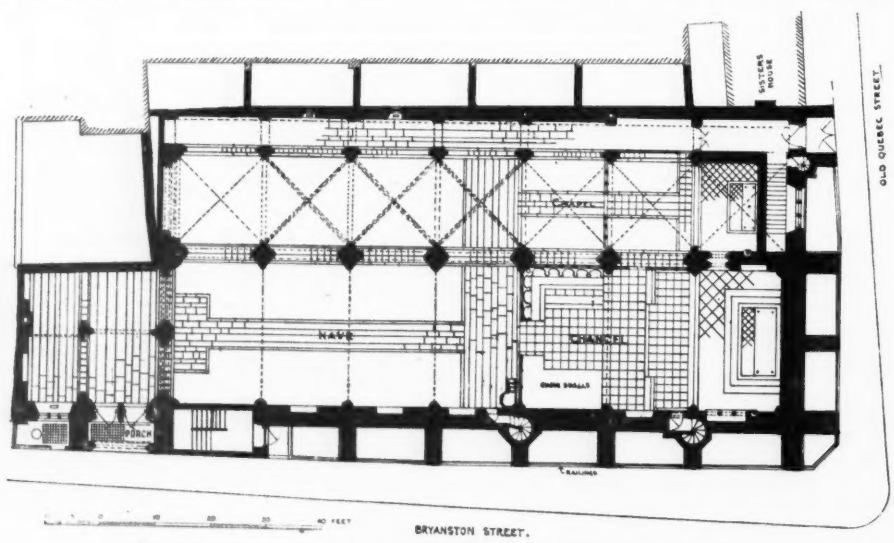
The Guild of Architects' Assistants.

We have before us the epitome of a paper read by Mr. W. H. Baker before a meeting of the Guild of Architects' Assistants, on December 4, entitled "My Experience of the Formation of an Approved Society (National Insurance Act)."

Mr. Baker generally explained the Act, laying special stress on the advantages of Clause 31, which makes provision for members leaving one society and joining another. He considers that the latitude and freedom of the wording of the Act is not realised, that it was possible to have stamps representing four, twelve, thirteen, or any number of weeks, and that it was not impossible to provide for payment by cheque. It was also possible to form an approved society doing away with sickness and disablement benefits and substituting any other of the fourteen scheduled benefits, one of which was superannuation or pension. His object was to make known the fact that compulsory insurance need not cause a disruption of the relations which had existed hitherto between principals and their assistants.

Manchester Society of Architects.

At a meeting of the students of the Manchester Society of Architects on December 4 a paper on "Architectural Sculpture" was read by Mr. W. O. Jones, Mr. J. H. Woodhouse being in the Chair. The lecturer devoted the chief part of his paper to the development of the architectural sculpture of Greece, culminating in the work of Phidias on the Parthenon. He laid great stress on the development in composition of the pediment, pointing out that the great essential is the gradual increase of interest and emotion of the subordinate figures leading up to the central dominating feature in the apex. In the discussion that followed Mr. Jones indicated the lines to be followed in the application of sculpture to modern work.



Church of the Annunciation, Old Quebec-street, W.: Plan.
Mr. Walter Tapper, F.R.I.B.A., Architect.

FIFTY YEARS AGO.

From the *Builder* of December 13, 1862.

Our Public Statues and Memorials.

NOTHING so much struck the artistic section of our crowds of foreign visitors during the present season as the extreme poverty of our public memorials and honorary statues. They appeared to our continental critics utterly unworthy of the intellectual and artistic eminence of our nation; and so, in fact, they are. And the foreign critics, however sarcastically unpleasant they may have been in their mode of stating it, were perfectly correct in their general verdict.

*** There is nothing we have so little faith in as the pessimistic note. No good has been achieved by mere negation. Yet we find little to say that can combat the "general verdict" above given. Whether our regard is turned upwards towards Nelson or downwards upon Oliver Cromwell, it must be confessed that we meet with but few monuments to kindle the imagination. The arch on Constitution Hill, with its crowning quadriga, may fairly be claimed as a recent triumph. So may Sir Goscombe John's little statue to Arthur Sullivan in the Embankment Gardens, while the Peter Pan group at Kensington must be counted as a graceful concession to a popular sentiment. But our memorials to great men seem to us best to find their parallel in the eulogiums of the after-dinner speech. In this country we have never acquired the lyrical expression of which sculpture is capable, perhaps because we take so little heed of the memory of our artists, musicians, and poets—a theme that would naturally evoke this expression. In Paris, the Parc Monceau and the Luxembourg Gardens are open-air galleries dedicated to French creative genius. The memorials to Watteau, Maupassant, Chopin, Gounod are exquisite, while Frémiet's Jeanne d'Arc is an example of the romantic charm in which an historical figure may be clothed. The standard of Classic in England is the Classic of the Renaissance, and has little in common with the Greek spirit, which embodied all the essentials of romanticism.—ED.

MONTHLY REVIEW · *of* · CONSTRUCTION.

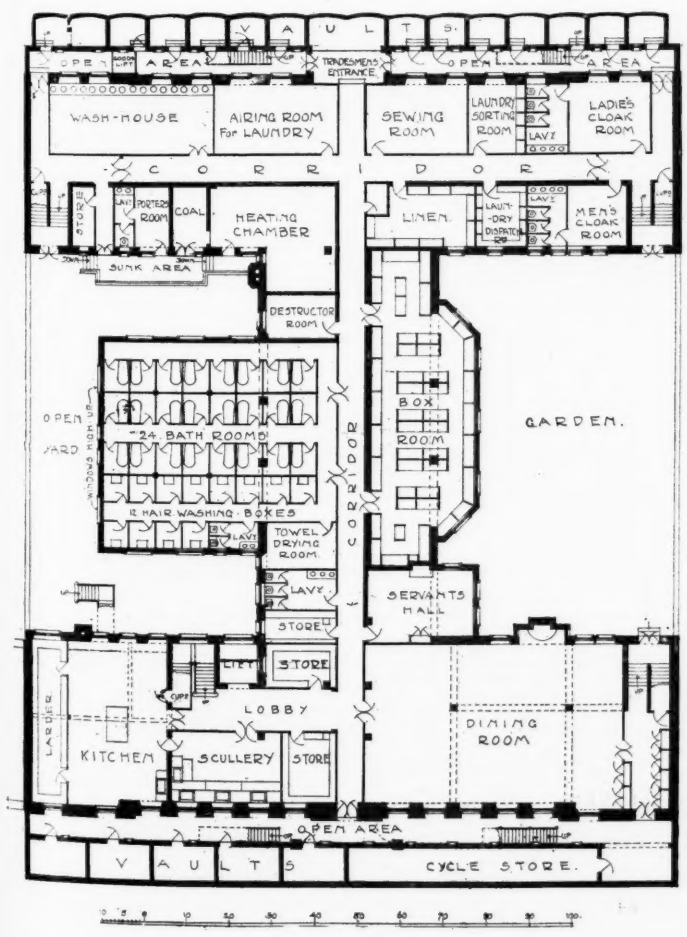
Warwickshire House, Gower-street, Bloomsbury: Entrance Hall.

Messrs. John Slater, F.R.I.B A., and J. M. Keith, A.R.I.B.A., Architects

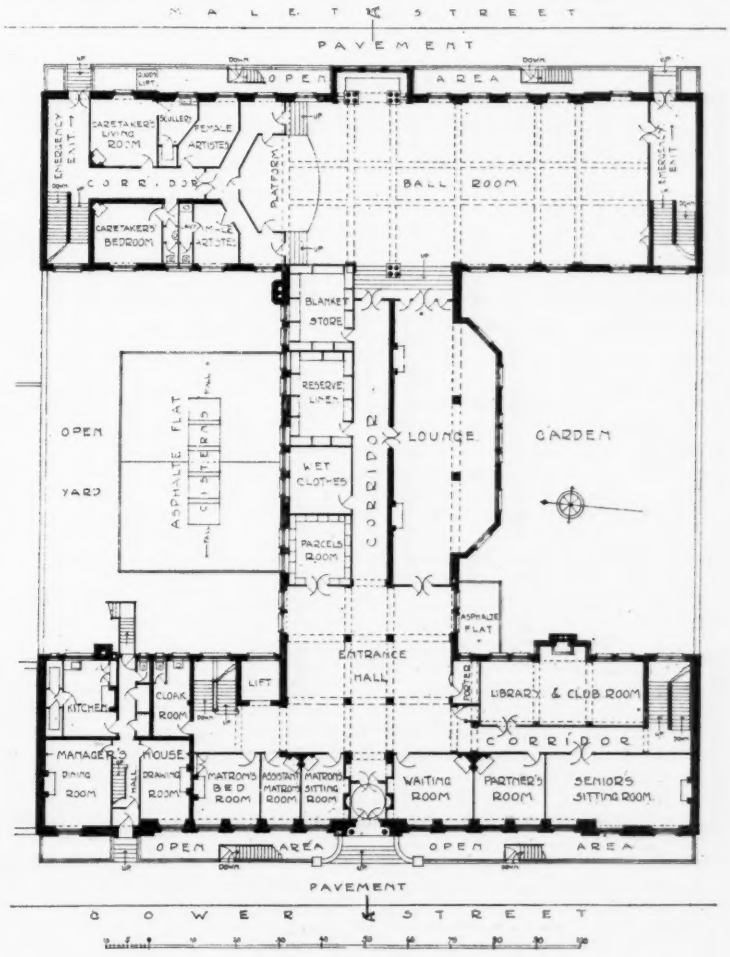
WARWICKSHIRE HOUSE, GOWER-STREET.

DURING the last few years there has been a considerable amount of discussion in the public Press as to the merits or demerits of the system of "living in" adopted for their employees by many of the large London drapers, and the conditions which admittedly have obtained, especially when the upper part of shop premises has been devoted to the living-rooms of the assistants, fully justified the severest criticism. Messrs. Bourne & Hollingsworth, of Oxford-street, have, however, always contended that under proper conditions not only are the comfort, well-being, and health of the employees much better secured by the "living-in" system than when they have to find their own lodgings, but that it is vastly preferred by them.

A few years ago this firm erected in South-crescent, Store-street, a large hall of residence for 418 of their female employees, from the designs of Messrs. John Slater & Keith, of Berners-street, and the success of this undertaking encouraged them to put in hand a much larger building for the same purpose under the same architects. An admirable site was secured on the Bedford Estate fronting on Gower-street and Malet-street, and this building is now in



Basement Floor.



Ground Floor Plan.

Warwickshire House, Gower-street, Bloomsbury.

Warwickshire House, Bloomsbury: Front to Gower-street.

Messrs. John Slater, F.R.I.B.A., and J. M. Keith, A.R.I.B.A., Architects.

occupation. Accommodation is provided for 614 residents, including servants, and it is not too much to say that the employees enjoy all the comforts of a first-class hotel.

From the plans and views reproduced herewith it will be seen that the architects have designed a building admirably suited to the uses for which it is intended. It has frontages of 152 ft. 8 in. to Gower-street and to Malet-street, with a depth of 168 ft. 5 in., and is H-shaped on plan, thus securing ample light and ventilation for all rooms.

In the basement next Gower-street are the dining-room, kitchens, etc., and next Malet-street are various store-rooms and service-rooms and a laundry and ironing-room, which are used by the employees for small articles of dress. In the central block are placed the servants' hall, a large box-room, and the baths and hair-washing rooms, twenty-four of the former and twelve of the latter, all separated by Sicilian marble divisions 6 ft. 6 in. high, carried on iron supports, so that the partitions are kept 3 in. off the floor. There is also a heating chamber with separate boilers for the hot-water supply and for the warming, the whole of the heating plant being in duplicate to provide against a break-down.

The ground floor contains a large entrance hall opening from Gower-street, part of which is used as a lounge, and opens on to another large lounge in the central block facing south. There are also a library, seniors' sitting-room, partners' room, matron's private rooms, and some specially heated drying-rooms for damp garments. Nearly the whole of the Malet-street frontage is occupied by a large ballroom, 84 ft. by 37 ft., which can also be used for private theatricals, with stage dressing-rooms for artists and separate lavatory accommodation. There are two separate entrances from Malet-street for this part of the building. A small maisonnette is cut off from the main building on the ground and first floors with separate entrance from Gower-street, and this is occupied by the head of one of the departments. With this exception the whole of the upper floors is occupied by bedrooms of varying sizes accommodating one, two, three, and in a few cases four persons. In order to avoid crowding up the bedrooms with wardrobes, etc., the walls of the corridors are lined with steel lockers for clothes, one for each person, and thus the bedrooms are always kept tidy. In the central block on each floor are the water-closets and housemaids' closets. On the top floor is a small isolation hospital, with six beds, separate kitchen, bath-room, etc., and nurses' rooms, and here any suspected case of infectious illness is at once isolated. An electric passenger lift is provided for the residents, and a goods lift for the kitchen services. The whole of the building is warmed by radiators.

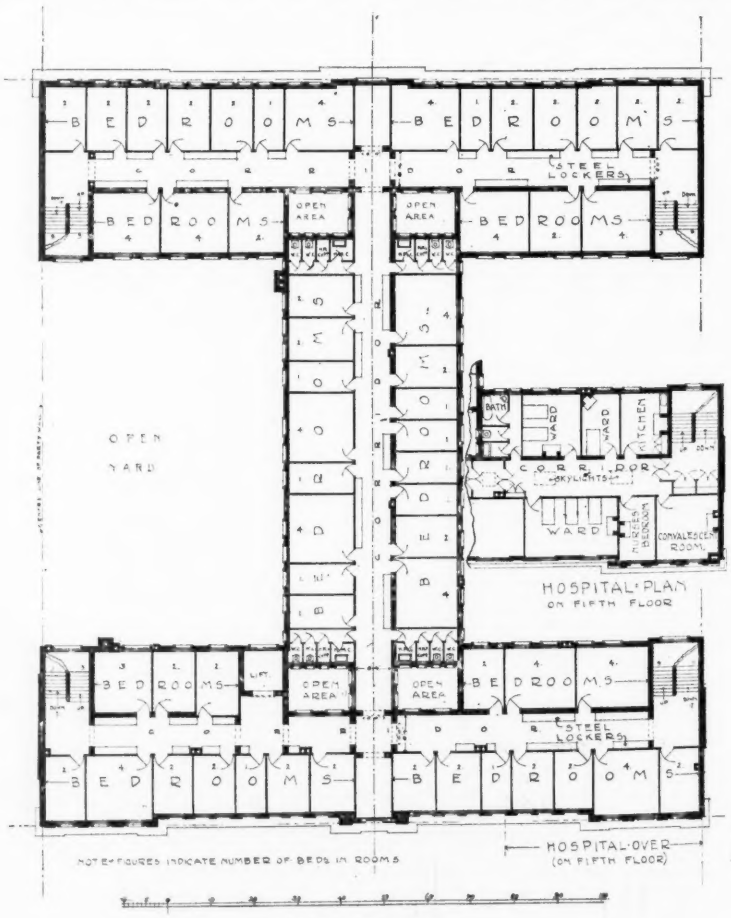
The building, which is faced with Lawrence's red bricks with Portland stone dressings, is of fire-resisting construction throughout, the floors being formed of hollow reinforced concrete beams by the Siegwart Fireproof Floor Company, Strand, W.C., and the whole of the steel stanchions and girders are encased in concrete. The roof is flat, covered with asphalt, and all the four staircases are carried up to the roof so that ample means of escape are provided. All the woodwork of ground floor is of oak, and the hall, lounge, and corridors are laid with marble, the ground being of white and blue Sicilian with green Norwegian slips. The ballroom floor is laid with 1¼-in. pitch-pine boards in narrow widths resting on 5-in. by 2-in. fir joists 16 in. apart, and these are spiked to another set of joists 3 ft. apart, thus securing a good springy dancing floor at a very economical outlay.

The bedroom floors are finished in Granolithic, on which is laid directly a very heavy linoleum, but no floor boards are used.

The constructional steelwork is by Messrs. Moreland & Son; the wrought-iron work by the Coalbrookdale Company, Berners-street, W.; the asphalt and damp-proof courses by Messrs. Val de Travers; the heating, ventilation, and hot-water supply by Messrs. G. N. Haden & Son; ornamental ironwork by the Coalbrookdale Company; baths, lavatories, etc., by Messrs. J. Bolding & Sons: the electric installation by Messrs. Barlow Bros., New Oxford-street, W.C.; the steel lockers by the Crittall Company; and the lead-glazing by the Luxfer Syndicate, Hill-street, E.C.

Messrs. R. Waygood & Co., Ltd., Falmouth-road, London, S.E., have supplied one of their electric passenger lifts to raise 25 cwt. at 200 ft. per minute from basement to fifth floor, a travel of 67 ft. The lift is fitted with up-to-date safety appliances, and the control is by an attendant operating a car-switch and self-centring detachable handle in the cage, with special slowing-down device on approach of stopping-place.

Messrs. Gilbert Seale & Son, Lomond-grove, Camberwell, have carried out the stone carving to the exterior, the wood carving to ballroom,



Bedroom Floor Plan.

Warwickshire House, Gower-street, Bloomsbury.

lounge, entrance hall, and entrance, and all the ornamental plaster-work in ballroom, lounge, entrance hall, and corridor.

The general contractors were Messrs. G. F. Wallis & Sons, of Maidstone, and Mr. Thomas Hosken was clerk of works.

PAINTING STRUCTURAL STEEL.

SCIENTIFIC research and practical tests have made clear the fact that certain pigments possess the property of encouraging corrosion when applied to steel, although excluding moisture, while others tend to retard corrosion. Thus pigments may be classified as moisture-excluding and rust-retarding, the former being most suitable for finishing coats, and the latter for priming and foundation coats.

The whole question of painting steelwork has lately been considered fully in a report presented to the American Railway Bridge and Building Association, from which the following notes are taken.

A rust-retarding coat can be suitably made of red-lead and pure linseed oil, freshly mixed, and with a small proportion of turpentine to aid penetration.

Natural oxides are slightly less costly, and can be applied by less expert labour than red-lead.

Linseed oil without pigment is considered undesirable as a first coat, because it tends to cause the peeling and blistering of paint afterwards applied.

For painting steel on the site, paints containing the same kind of pigment as in shop coats can be used if covered by an elastic outer coat, otherwise only paints suitable for finishing should be applied.

As a priming coat on the site red-lead or oxide paints should be darkened by adding lamp or carbon black to the extent of from 5 to 10 per cent. The objects are to enable the men to judge if the surface is being properly covered, and to make the second coat more elastic.

Carbon, lamp-black, and graphite give satisfactory results as finishing paints; but the oil must be of suitable quality, and the addition of some appropriate gum improves the paint in respect of elasticity and durability.

Before repainting structures the surface should be cleared from all scale, rust, and dirt, preferably by sand blast. If the entire structure cannot be repainted with a rust-retarding priming-coat the parts cleaned and all exposed surfaces should be given a coat of red-lead or oxide paint before the finishing coat is applied. The use of turpentine in paint applied over the old surface is advisable because this will promote adhesion between the two layers.

WIND PRESSURE ON BUILDINGS.

SUPPLEMENTARY to the investigations made in this country on the subject of wind pressure on structures, some interesting experiments by Professor Smith, of Purdue University, are worthy of notice.

For the purpose of his tests Professor Smith used a model building erected on an open site and constructed so that the wall length and height and the roof slopes could be varied to give twenty-seven different combinations.

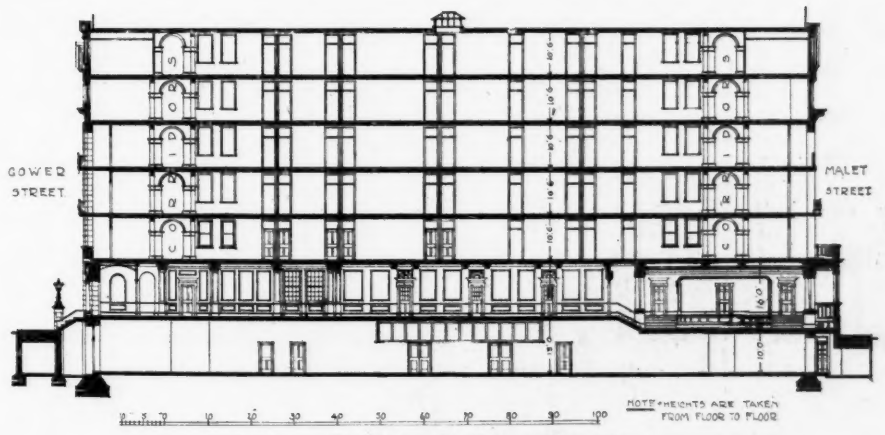
From a study of the pressure diagrams and curves plotted from the values obtained after correction for measurable errors in the apparatus, Professor Smith deduces the following conclusions:—

(1) The increase of wall height tends to decrease relatively the average pressure on the windward surface, while the decrease of wall height with unaltered roof height tends to increase the average pressure on the windward wall surface, and to cause pressure on the windward roof slope.

(2) The increase of wall height tends to increase relatively the average suction on the leeward wall. If the roof is long in comparison with the height, or if the height is small in comparison with the roof span, the leeward suction is relatively small.

(3) The increase of height tends to increase relatively the flow of air around the ends of a building. If the building is short in comparison with its height, the flow of air around the ends has more influence than the flow of air over the roof upon the relative pressure and suction on the windward and leeward surfaces, respectively. As the end flow increases the windward pressure tends to become of maximum value, while the leeward suction at the middle tends to become of minimum value.

In view of these conclusions Professor Smith considers that present methods of estimating wind loads on industrial buildings should be modified. For instance, in the case of roof trusses on masonry walls or on steel framing with long diagonals, he recommends that a suction effect of about four-tenths the unit wind pressure should be taken for the leeward roof slope of all closed buildings, and a pressure or suction effect derived from his curves, taken for the windward slope. The resulting stresses will not only differ in amount from those calculated on the customary basis, but in some members will differ in sign. He considers that wind loads on purlins may generally be neglected, or taken at lower values than usual, but points out that the need for secure anchorage to guard against the lateral movement and vertical displacement of roofs is clearly indicated by the results obtained.



Section on Line AA. (See Ground Floor Plan.)

Warwickshire House, Gower-street, Bloomsbury.

A NEW CATHOLIC HOSPITAL.

IN January, 1913, St. Andrew's Hospital, Dollis-hill, N.W., will be ready to receive patients. The Institution, which owes its origin to the generosity of an anonymous lady, stands on the crest of Dollis-hill, on a site of 7 acres, and advantage has been taken of a long level plateau to give an ideal situation for the main buildings. They are thus placed far above all obstructions, present or future, of light, air, and view; and the outlooks comprise, in the various directions, the vale of Cricklewood to the south, the Weald of Harrow westwards, the valley and waters of the Brent to the north, and the heights of Hampstead Heath and Golder's Green to the east.

The elevations of the hospital buildings are of red brick with Portland stone bands and dressings. The centre block is emphasised with a façade of stone, and is surmounted by an octagonal dome and cupola. At the four corners are flanking towers forming the sanitary annexes, and containing the secondary staircases, and these towers are also finished with domical shaped roofs. The coverings of the ordinary roofs are of grey-green Delabole slates, and the domes and cupola are covered with copper. Open-air terraces are formed along the front at the ground-floor level and balconies at the first-floor level. The architectural character of the centre is of a simple Classic style. The projections formed by the entrance lobbies support an open-air balcony with stone balustrading, above which at the second-floor level is a niche with a life-sized statue of St. Andrew, the patron of the hospital.

The building consists of four floors, and comprises administration centre, two wings accommodating the wards and an axial corridor at the back connecting with the commissariat and nuns' and lay nurse quarters.

The basement floor is devoted to general stores, heating chambers, cold storage, etc., and is approached externally by a sloping way, by means of which ambulance litters can be easily wheeled in and out. The centre corridor runs from end to end, giving direct access to all the various stores, stairs, and offices. The central axial corridor gives direct communication with the kitchens.

On the ground floor the main entrance gives access to the entrance hall, at the sides of which are the rooms of the administrative offices and waiting-rooms. This hall leads immediately to the main staircase and to the side corridors connecting with the ward on the right and the ward on the left, when built; while the axial corridor beyond leads to the kitchen and refectories of the sisters and nurses. Adjoining the entrance hall and main staircase are the medical officers' rooms, reception-room for patients and dispensary. The wards are in direct communication with the main corridor, and are long, lofty, and well lighted, each for eighteen beds, and each ward has its own ward kitchen, day-room, and sanitary annexe.

The main staircase is built around a commodious enclosure in which is a lift designed to accommodate a bed or litter and giving access to all floors from the basement upwards. This lift is operated by electricity and is automatically controlled so that no attendant is required to work it.

On the first floor (and grouped round the centre corridor) are the private wards with their separate kitchen, bathroom, and sanitary annexe, also the rooms of the nursing superintendent. Here also (approached by a short corridor) are the X-ray room, with its dark-room and test-room adjoining; and there is also a mending-room and clothes-room adjacent to the linen-room. The main corridor gives direct communication to another ward. This is of equal accommodation to the ground-floor ward, and, like it, has its day-room, ward kitchen, bathroom, and sanitary annexe, and secondary staircase leading down to the grounds.

The second floor is also served by the main staircase and the main bed and passenger lift, and gives convenient access for both patients and sisters to the chapel, which is on this floor under the dome.

Adjoining the chapel is the priests' sacristy, and later on a tribune will open into the chapel from the adjoining sisters' sick-room.

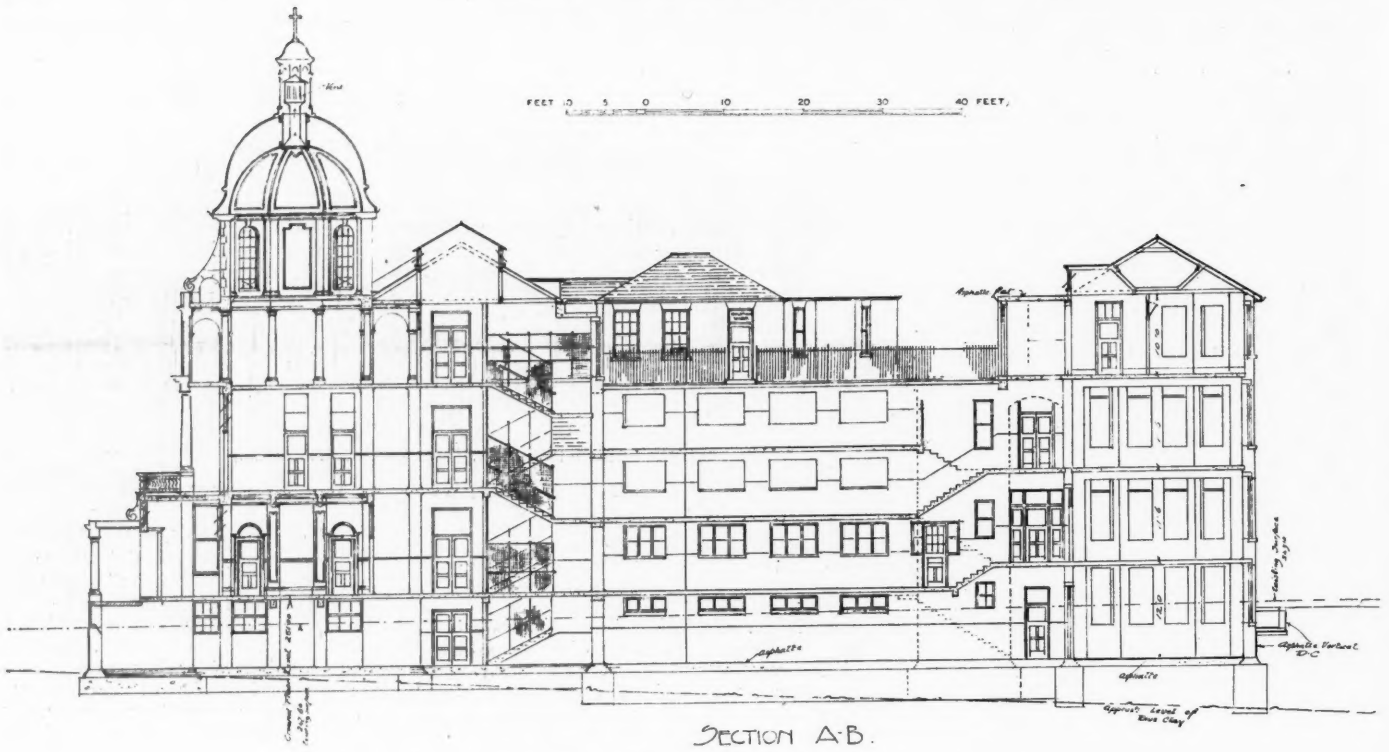
Immediately joining the corridor and main stairs is the operating-room, with its anæsthetic and sterilising rooms and a robing chamber for the operating surgeon.

The remainder of this floor so far as the main building is concerned is apportioned to the use of the sisters as dormitories.

The axial corridor is an open air approach to the rear building, and leads to a small suite of isolation rooms. There is an outside stair to the flat roof, which can be utilised as a roof garden, and which affords a splendid view of the surrounding country.

The rear building has on the basement floor the kitchen, scullery, meat and vegetable stores, and tradesmen's entrance. This kitchen suite communicates by means of a direct corridor to the centre of the main building, where two service lifts run to the upper floors, and by means of which the food is sent up to the various wards. The service will be conveyed on trolleys, with special heating arrangements for keeping food warm in transit. The lifts have automatic electric control, so that the service will be convenient and expeditious.

The ground floor of this rear building has refectories of the sisters and dining-room of the lay nurses, with service lift from the kitchen immediately below. Two stairs communicate with the first floor, on which are the separate recreation-rooms of the sisters and the nurses, whilst the nurses' stairs continue to the second floor, where their private rooms are situated.



St. Andrew's Hospital, Dollis-hill, N.W.

Mr. Robert L. Curtis, Architect.

Throughout the buildings every precaution has been taken to eliminate corners and angles which might induce the lodgment of dust. Rounded corners, angles, and curves have been worked on walls, floors, and ceilings, and joinery wherever practicable, and the surfaces throughout are of impervious materials. The floors, roofs, and stairs are of reinforced concrete construction and are practically fireproof.

The floors throughout are finished with Terrazzo mosaic (with the exception of the chapel and hall, which are in the Roman mosaic). Terrazzo mosaic dados have been put to the stairs and corridors, and the walls and ceilings of wards and corridors are of Keene's cement, and will be finished in enamel and in flat distemper to the ceilings.

The heating of the main wards is by open fire central ventilating stoves, with sterilisers, and the private wards and other apartments are warmed by open well fireplaces. The corridors, hall, staircases, and administration rooms are heated by low-pressure hot-water radiators, and similar hot-water secondary heating is also supplied to the wards; the installation throughout being from the hot-water mains in the basement supplied by the duplicated boilers in the furnace-room. Here also is a battery of hot-water boilers, which supply a hot-water domestic service to the whole of the lavatories and suites throughout the building. The sanitary fittings, lavatories' water supply, together with the outside drainage have been carried out under the supervision of Messrs. Best & Sons, consulting engineers.

The grounds are being laid out with approach roads and paths, with trees and shrubs and green sloping lawns at the front and kitchen-gardens at the rear. The boundaries are enclosed with oak fencing, and the frontage along Dollis Hill-lane is protected with wrought-iron fencing and entrance gates.

The architect for the work is Mr. Robert L. Curtis, Finsbury-square, E.C.

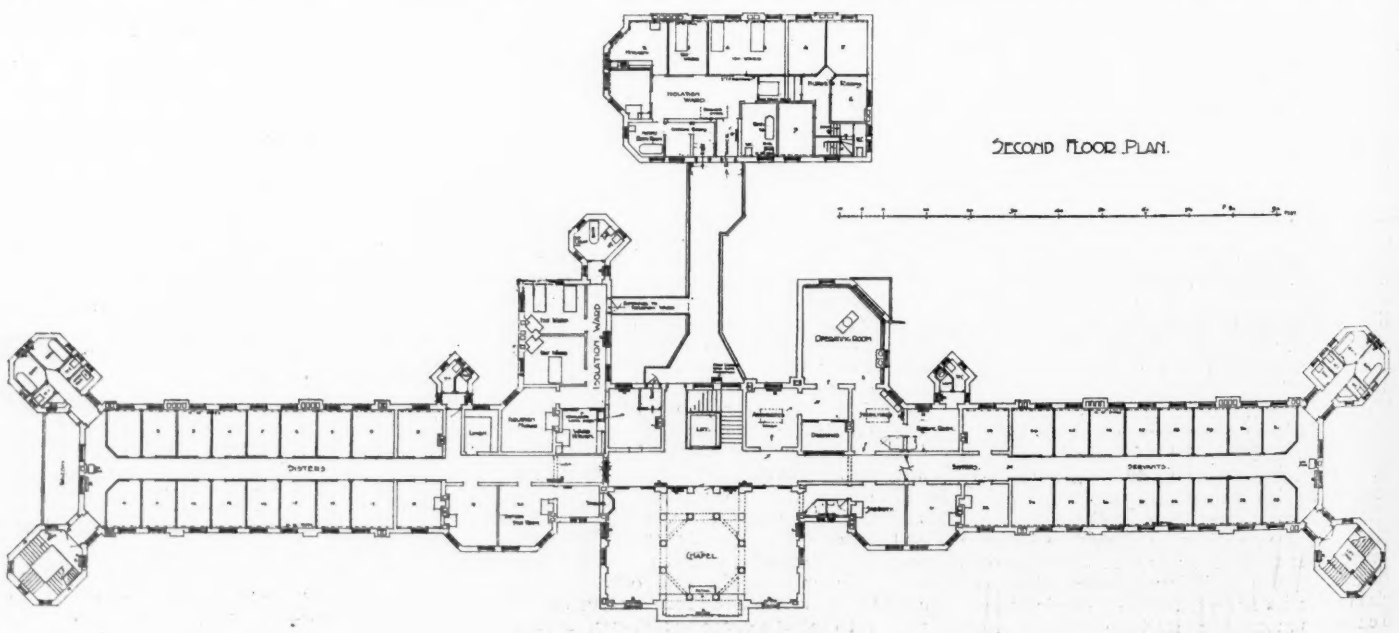
Messrs. Patman & Fotheringham, Ltd., are the general contractors for the building; Mr. Peters is foreman in charge; and Mr. James Keating (Ilford) the clerk of the works. The following were the principal sub-contractors:—

Fireproof ferro-concrete floors and stairs by the Cubitt Concrete Construction Company; heating and hydrant installation by Messrs. Jeffreys & Co., Ltd.; electric lighting and telephones by Messrs. Bakewill & Son; electric lifts by Messrs. Waygood & Co., Ltd.; wrought-ironwork and railings by Messrs. Bayliss, Jones, & Bayliss, Ltd.; stoves by the Teale Fireplace Company; sanitary fittings by Messrs. Shanks & Co., Ltd.; locks, bronzework, and ironmongery generally by Messrs. College & Bridgen, of Wolverhampton; pavement lights by Messrs. Hayward Brothers & Eckstein, Ltd.; blinds by the General Seating Company; cooking and kitchen fittings by the Slater Engineering Company, Ltd.; oak fencing by Messrs. E. C. White & Son.

BILLS FOR CONSTRUCTIONAL WORKS:

SESSION 1913.

THE London County Council's Bill provides for tramways, with street widenings at intervals *passim* from Cricklewood to Marble Arch (but this project was abandoned at the Council's Meeting on last Tuesday); Child's Hill, Hendon, to Chalk Farm-road, by way of Finchley and Adelaide roads; Southwark-street to Cheapside, *viâ* St. Paul's Bridge; Crouch End to Seven Sisters-road; and Holborn to Farringdon-road, *viâ* Charterhouse-street, and Farringdon-road to Ludgate-circus. The Metropolitan Railway seek for powers to acquire the Great Northern and City Railway undertaking and to extend it to Lothbury, and to connect it with their own system at Liverpool-street and with Bank station of the Waterloo and City line; the London Underground Railway Company propose to acquire the Central London and City and South London Railways with enlargement



St. Andrew's Hospital, Dollis-hill, N.W.

Mr. Robert L. Curtis, Architect.

of the City and South London Company's tunnels from St. Pancras to Clapham Common; and the Lancashire and Yorkshire Railway will make new lines at Bolton, Southport, Knottingley, Goole, and Royton, and enlarge Victoria Station, Manchester. Powers are sought by the Metropolitan Water Board to construct three service reservoirs, with ten aqueducts in Hanworth, Greenford, Eltham, Woolwich, Tatsfield, Cudham, and Westerham, and conduits at Hanworth, Sunbury, and Laleham; by the Mid-Kent Water Company, Barry Urban District Council, South Staffordshire Water Company, and Bradford, Coventry, Huddersfield, and Northampton Corporations for reservoirs, aqueducts, and ancillary works. For new bridges there are projects by the London County Council—rebuilding of Lambeth Bridge; the Great Northern Railway—bridge across Regent's Canal; Leicester Corporation—three new bridges; Lancashire and Yorkshire and Cambrian Railways—new bridges. Extensive harbour and maritime improvements are projected by the Leith Dock Company and the Findochty and the Limerick Harbour Commissioners; by the Dover Harbour Board, with new wet dock, two sea walls, and a quay, conversion of the present tidal harbour into a wet dock, and a communication between that harbour and the Commercial Harbour; by the Ipswich Dock and the Nolton Haven Commissioners; at Greenock and Port Seton, with new piers, quays, etc.; and for two piers, a dock wall and wharf, a wet dock, etc., at Padstow. Escalators will be constructed at Oxford-circus, Paddington (Waterloo and Baker-street line), and Charing Cross (Hampstead line) stations, to form connexions with existing stations.

A POURED CONCRETE HOUSE IN PARIS.

SUPPLEMENTARY to our article on the poured concrete house constructed at Santpoort, we here give particulars of a similar building completed in May last at St. Denis, now a working-class suburb of Paris.

This dwelling-house was constructed in accordance with the Harms et Small system by the Société Française de Maisons et Constructions Moulées.

The general mould was built up of 2,602 cast-iron sections assembled by means of bolts and nuts so as to provide two surfaces between which the concrete could flow, and kept at the required distance by lateral stays.

Fig. 1 shows part of the interior of the mould with the reinforcement for the walls in position, and Fig. 2 the exterior of the mould up to first-floor level. It will be noted from Fig. 1 that the concrete is only slightly reinforced, the sectional area of steel being only about ⅓ per cent. of the sectional area of the concrete. The rods are arranged so as to form a network with proportionately large openings.

In addition to the reinforcement, there are placed in the mould pipes for chimney flues, the outer sides of the door and window frames, the ends of the stair treads, and the ends of the floor beams.

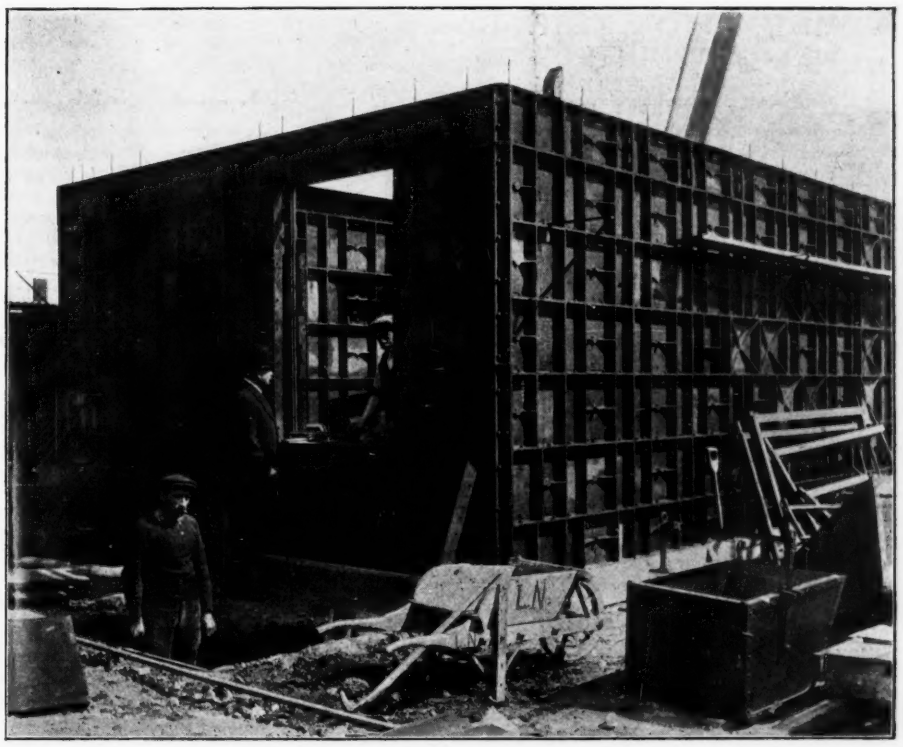


Fig. 2. Poured Concrete House, Paris: Mould erected to First Floor Level.

The latter were moulded separately of 1 : 2 : 2 concrete and suitably reinforced. By moulding the beams in advance it is possible to remove the general mould at an earlier stage than would be permissible if the floors were poured similarly to the walls of the building.

The concrete for pouring is mixed in the proportions of one part Portland cement, three parts sand, and two parts gravel, with 120 to 175 per cent. of water, so that the mixture shall be able to flow very freely.

For preparation of the concrete a rotary mixer of sufficient size was placed near the site of the building with a platform conveniently arranged for feeding purposes. The raw materials were conveyed to the platform in small trucks proportioned to deliver the correct amounts of cement, sand, and gravel for each batch of concrete.

Concrete was conveyed from the mixer in skips sliding down an inclined plane, hoisted to the top of the mould, and poured into the space between the two sides.

All the concrete was poured at one point, without tamping of any kind. The perfect fluidity of the concrete is due not merely to the large proportion of water, but also to the admixture of a substance provided for in the Harms et Small patent.

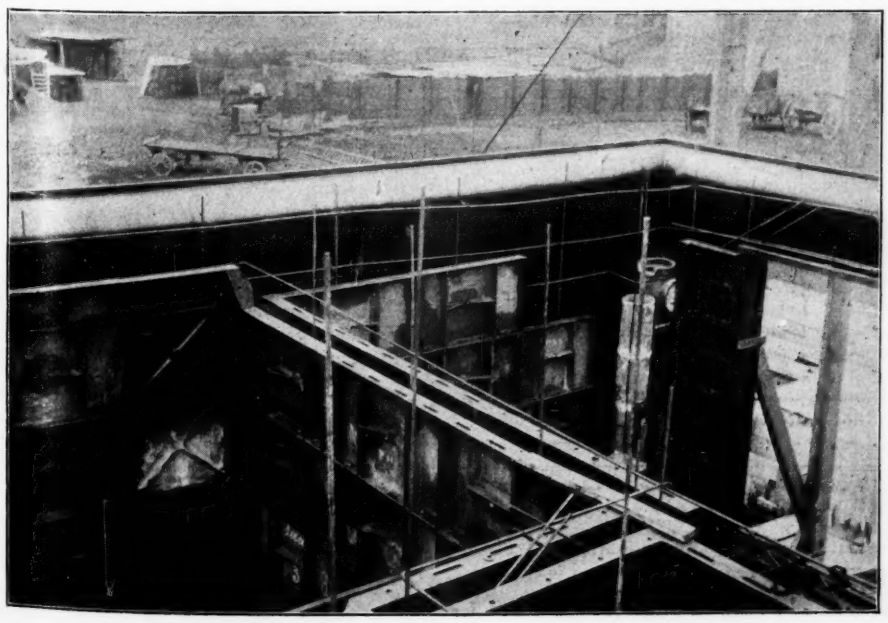


Fig. 1. Poured Concrete House, Paris: Interior of the Mould.

In order to overcome the natural tendency of the materials to separate by gravity after the concrete has been poured the viscosity of the latter is sufficiently increased by the addition of colloidal substances in small quantities during the operation of mixing.

After removal of the moulds the surface of the concrete was found to be perfect in every respect; the joints of the castings forming the mould leave fine lines on the surface, resembling the joints between cut stones in masonry.

The exterior wall surfaces can be left just as they are, and the interior surfaces can be painted or decorated in any desired style.

Houses constructed in this manner possess the advantage of being perfectly dry from the start, and they are particularly hygienic, as all the interior surfaces can be washed, and there are no inaccessible spaces such as abound in houses constructed in accordance with ordinary methods of building.

Another advantage that should appeal to architects and builders is that the perfectly monolithic nature of the entire building enables it to act as a single unit, and therefore reduces foundation work to a minimum, at the same time obviating the risk of cracks such as appear in ordinary buildings as the result of local settlement of the soil.

The merits of the system are clearly expressed in the following extracts from a report on the house at St. Denis by M. G. Tronchet, Architecte en Chef du Gouvernement:—

"The appreciable advantage of the system is that one may erect the moulds without scaffolding, as provision is made for the support of brackets or planks on which the workmen may stand while building up the moulds.

After examination of all parts of the house it was found that the concrete was equally dense at the top and bottom.

On the day of pouring two blocks of concrete were moulded for examination at the Laboratory of the Ponts et Chaussées, M. Mesnager, the Chief of the Laboratory, witnessing the operation of moulding. We both recognised the perfect homogeneity of this product, employed for the first time in France; the said homogeneity was still more evident on the breaking of one of the blocks.

Tests made by M. Mesnager at the Laboratory of the Ponts et Chaussées showed the concrete to possess the crushing resistance of 75 kg. per cm.^{2} (1,066 lb. per square inch).

The cost of a house of ordinary materials, as usually built on the outskirts of Paris, and of superficial area equal to that built, would be from 9,000 to 10,000 francs. The cost in poured concrete in accordance with the tender of the Société Française des Maisons et Constructions Moulées being 7,500 francs, there follows an economy of from 1,500 to 2,500 francs, or about 17 to 25 per cent., a very appreciable saving in economical buildings."

NEW METHOD OF TESTING WELDED JOINTS.

IN a paper presented by M. C. Frémont, of Paris, at the Congress of the International Association for Testing Materials the author advocates the impact test for determining the strength of welded joints. For the purpose of his experiments test pieces measuring 8 mm. × 10 mm. in cross-section were employed, the welds having been made in France and elsewhere by smiths specially selected on account of their skill. The welds were of the scarf-jointed type so as to obtain large contact surfaces. Micrographical etchings of the welds showed that a line of demarcation existed between the two metals at the seat of the weld in every case, thus indicating that the portions in contact had not interpenetrated.

The iron adopted for the various welds had a tensile strength of from 35 kg. to 40 kg. per square millimetre, and the mild steel a tensile strength of about 40 kg. per square millimetre. Impact tests on the unnicked test prisms measuring 8 mm. × 10 mm. in cross-section gave from 26 to 32 kilogrammetres for the iron and about 50 kilogrammetres for the steel, the test pieces not exhibiting fisures in any instance.

Similar test pieces were prepared from the welded metal in such a manner that the bending test could be applied in line with the welds to enable the strength of the latter to be determined. Under the impact test these pieces exhibited in all cases a strength inferior to that of the original metal. In most of the tests the pieces failed by the opening of the weld, their resistance being very small.

Among the better results obtained the steel-on-steel test pieces exhibted a fair amount of deformation before failure, the force required being from 15 to 16 kilogrammetres, or less than one-third of the strength of the original metal.

From the results obtained by M. Frémont it appears that the static strength of the forged scarf-jointed welds is equal to the static strength of the metal only when the welded surface is sufficiently large to compensate for the lower strength per unit area.

Autogenous welds are still weaker than forged welds, not only because of the smaller surface of adhesion, but also on account of the lack of continuity in the added metal, and the lack of strength imparted by hammering in ordinary welds.

CONSTRUCTION NOTES.

Asphaltic Road-binders. THE chief feature of the natural asphalt industry, as set forth in the record of mineral resources by the United States Geological Survey, is the great extension of the use of residues from the asphaltic varieties of petroleum as binders in the surface of macadam roads. The asphaltum used for this purpose was 159,424 tons in 1910, and 234,951 tons in the year 1911. The use of a soft asphaltum from Venezuela, which is admirably suited for this purpose, is increasing.

A by-product of the oil industry is fast supplying the demands for asphaltum in the United States, whilst the petroleums from California and Texas have furnished, in the course of their utilisation, large supplies of asphaltic residue, which, when treated with air, becomes sticky and even elastic to a certain extent. Elastic material for roofing and substitutes for rubber in automobile tyres have been obtained from asphaltic residues by this blowing process or by treating with sulphur; whilst this sulphurisation of asphaltum has been applied with good effect to elaterite and similar hard asphaltums.

The consistency of materials, such as pitch, asphalt, coal-tar, and the like, used as bituminous road formers or binders, may be ascertained by an appliance devised by Mr. W. Crosby, and described in detail in the specification of the English patent No. 16,997 of 1911. The operation is determined at temperatures from 0 deg. to 100 deg C., or any convenient temperatures above or below these, by measuring the distance travelled through the substance that is being tested, by plungers under known loads, in a fixed period of time, say, five seconds. The apparatus may also be used to measure the period of time required for the plungers, under known loads, to travel a fixed distance through the substance to be tested, which is contained in a box of fixed dimensions, and is maintained at a known temperature. In this case the time required by the plunger to travel the fixed distance is taken as the measure of the consistency. The apparatus consists essentially of an accurately balanced wheel, around the circumference of which a thread passes, which is attached at one point to prevent slipping. The plungers are attached to one end of the thread, and a pan for counterpoising weights to the other, and means are provided for accurately measuring the arc through which the wheel turns. The specification referred to contains dimensions of the plungers and other parts.

Artesian Wells, Wembley, Middlesex. THE Artesian Well-Boring Company, of Pentonville-road, N., have constructed a well at Wembley for the London and North-Western Railway Company to supply the proposed electricity generating station for the Watford and Euston and Broad-street line. A 15-in. bore was made to 250 ft., and the bore was then reduced to 12 in. for 250 ft. deeper. The well is steel lined to 300 ft., to which depth are also taken down a 4-in. supply pipe and a 2-in. compressed air main, for the air lift method of raising the water. A flow of more than 15,000 gallons per hour is obtained, and if the results continued to be as favourable additional borings will be proceeded with.

Railway Station Improvement, Birmingham. THE Great Western Railway Company have effected considerable improvements at their Central Station, Snow Hill, Birmingham. The old single-span roof was removed, beginning at the north end, as the new one was erected. The new roof is of the ridge and furrow type, carried upon girders of parallel-flanged open-web type, running transversely to the direction of the main line. About two-thirds of the station is covered by this roof, which has a length of 500 ft. and a superficial area of 108,000 sq. ft. The steelwork carrying the railway and platforms aggregates about 500 tons. In one of the brick arches, which has been constructed beneath the lines, is the transformer station, with two motor generators for the electric signalling system which has been installed. The estimated cost of this work is about a million pounds, and has taken over three years to execute.

Fire and Load Tests of a Reinforced Concrete Floor. A REPORT issued by the British Fire Prevention Committee gives full details relative to the testing of a concrete floor reinforced by an American type of steel meshing, the patentees claiming that such reinforcement is less liable to be affected by heat than reinforcing rods, owing to the smaller diameter of the metal sections used. The floor was exposed for three hours to fire, the temperature reaching 1,800 deg., but not exceeding 2,000 deg. Fahr., followed by the application of water for five minutes. The concrete was composed of 3 parts furnace clinker, 2 parts sand, and 1 part Portland cement, its behaviour having been such as to justify classification as affording "Full protection."

An interesting feature was the supplementary load test, of which particulars are given in an appendix to the Report. This test, conducted three weeks after the fire test, showed that the load-bearing capacity of the construction had not been seriously reduced, the floor having been loaded to the extent of 560 lb. per square foot, without causing excessive deformation.

L.G.B. and Reinforced Concrete. A FURTHER letter on this subject appears in the *Times Engineering Supplement* from Mr. R. W. Vawdrey, of the Indented Bar and Concrete Engineering Company, who supports the views expressed by previous correspondents relative to the unfair differentiation by the Local Government Board between reinforced concrete and other materials. The writer also enters a timely protest against the mistaken comparison instituted by a previous correspondent in the same journal of the strength of reinforced concrete and timber. To say that plain concrete possesses about half the resistance of timber such as fir is quite justified by well-known data, but reinforced concrete is quite a different material, the tensile and compressive strength of which can be raised far beyond that of fir, by increasing the proportion of steel, and which, as Mr. Vawdrey says, can be, and is, so designed as to obtain advantages which are impossible in any other material. Lack of confidence in reinforced concrete can only result from ignorance of the satisfactory results that have attended its use, and perhaps in some measure from unfamiliarity with theoretical principles and methods of calculation such as those given years ago in the R.I.B.A. Report, and which ought to be as readily understood as are the methods employed for the calculation of structures in timber and steel.

Reinforced Concrete Screw Piles. IN a "Note" published on June 9, 1911, we described and illustrated the reinforced concrete screw piles patented by Mr. G. C. Vernon-Inkpen, F.S.I. We have now received a copy of a patent specification setting forth the details of certain improvements upon the original design of the piles. The principal points are (1) the employment of ordinary commercial sections of steel for the purpose of reinforcement; (2) the provision of additional coils placed in the shaft, in the same direction as the screw threads and in conjunction with the spiral reinforcement; the provision of tangential arms in a reverse direction, and in addition to those following the descending screw, so as to enable the piles to be screwed out of the soil without risk of fracture; and (3) the provision of radial and tangential arms passing wholly or partially through the concrete of the shaft.

Proposed Tower at Düsseldorf. DESIGNS have been prepared by two German engineers for the erection at Düsseldorf of a steel tower 1,640 ft. high, or 656 ft. higher than the Eiffel Tower. The principle adopted is one embodying girders without diagonal bracing, introduced years ago by Professor Vierendeel, of the University of Louvain. It is claimed that the use of these girders gives a lighter appearance and better architectural effect than the ordinary diagonal system. The base will be 640 ft. square, and the sides of the tower will slope slightly inwards for the first 312 ft. of its height, and above that level up to the height of 1,476 ft. the structure will assume the form of a graceful spire. It will widen out into a platform 82 ft. square, on which it is proposed to establish a restaurant, and to which access will be obtained by means of two lifts, while two spiral staircases will lead to the summit. Apart from its structural interest the tower should be useful as a meteorological observatory and a wireless telegraphic station.

New Reservoir at Blackburn. A NEW storage reservoir now under construction at Wilpshire, in connexion with the waterworks system of Blackburn, will be supplied direct from the reservoirs at Whitewell, and is intended to augment existing supplies in the districts of Little Harwood, Bastwell, Wilpshire, and Langho, at present drawing water direct from the mains. The site of the new reservoir includes some 58 acres, of which 38 acres will form the water surface area of the reservoir. The capacity of the reservoir will be 140 million gallons and its maximum depth 53 ft. At the Blackburn end of the site it is necessary to construct a dam 2,000 ft. long, and at the opposite end the roadway will be raised 20 ft. The work of excavation involves the removal of 23 cubic yds. of earth. It is estimated that the construction of the reservoir will occupy two and a half years, and that its completion will have the effect of postponing for some years the necessity of extending the waterworks in the Whitewell district. The contractors are Messrs. R. M'Alpine & Sons, of Glasgow and London, and the cost of the works is stated at 65,000*l*.

Subsidence of a Waterworks Embankment. CONSIDERABLE trouble has been given at Rochomie Waterworks, whence the town of Buckie is mainly supplied with water. Three years ago a dam was constructed, about 2 miles from the town, comprising an earthen embankment, with a puddle core 60 ft. high, holding up about 47 ft. of water. A valve tower is connected with the middle of the embankment by a steel bridge, and, owing to the undermining of the embankment by water, the concrete foundations of the bridge have subsided, throwing the superstructure seriously out of position. As a temporary expedient the water level has been lowered so as to reduce the pressure, and expert advice is being taken with regard to the measures necessary for effecting a permanent cure of the defect that has developed.

THE BUILDING TRADE.

THE DURABILITY OF WIRE ROPES.

THE durability of wire ropes for use in cranes, lifts, and hoisting apparatus generally is of much importance to building contractors and otner classes of our readers.

The life of a wire rope depends to a considerable extent upon the quality of the material and the size of the wire itself.

As a general rule, the wire used in the manufacture of lifting ropes is of crucible steel, with the tensile strength of from 80 to 130 tons per square inch. If the rope is made of very hard steel, it is desirable in the interests of durability that the winding drums should be of proportionately larger diameter.

Another point of importance is the ratio of the wire diameter to the diameter of the rope. If the wires are too large they suffer excessive strain in passing over pulleys, and if too small they are quickly worn away by friction against the pulleys and against each other in the body of the rope.

In discussing this question in a paper read to the Institution of Mechanical Engineers Mr. Daniel Adamson points out that abrasion is the principal factor in limiting the life of wire ropes, and discusses its effects upon ropes formed of relatively fine wires.

When a rope so constituted is passing over a pulley the pressure at each point of contact between it and the pulley, and between the individual wires, may be assumed at one-quarter of the pressure occurring in a rope of the same diameter, but made of wires of double the diameter. The damage done to the smaller wires by contact, even under the lower pressure, will probably be half that done to wires of double the size in a rope of the same diameter, and will result in the cutting through of the wire in half the time, thus making the effect of abrasion proportionately great.

Again, if the diameter of the pulley is reduced, the pressure at the points of contact and the bending stress will be proportionately increased, so that it may reasonably be expected that with a pulley diameter proportioned to the wire diameter the life of the rope with fine wires will be one-quarter that of a rope with the coarser wires, and working over a pulley of correspondingly larger diameter.

Manufacturers of wire ropes usually publish recommendations as to the minimum sizes of pulleys for adoption, but give no information as to the effect of using pulleys of different diameters—a point on which precise data would be particularly valuable.

The experience of users is extremely variable, owing to the different conditions under which wire ropes are employed. Probably the most reliable data of the kind are those given by Mr. Andrew S. Biggart, A.M.Inst.C.E., in a paper read to the Institution of Civil Engineers, and obtained as the result of tests made with the object of ascertaining the best type of rope for employment in the construction of the Forth Bridge.

The apparatus used by Mr. Biggart consisted of two pulleys round which the rope was passed under tension, and the tests were made by passing the ropes to and fro until breakage ensued.

From the results obtained with various kinds of rope working under different conditions, the general conclusion may be drawn that by increasing the diameter of the pulleys to an extent equal to two circumferences of the rope the life of the latter can be doubled. It should be borne in mind, however, that, in addition to the ratio of pulley and rope diameter, the user must also take into account the arrangement of the rope and pulleys, and make allowance for the relatively heavy wear due to complicated arrangements, with several falls of rope, by increasing the diameter of the pulleys.

Mr. Biggart's experiments also show the beneficial effect of oiling wire ropes, this treatment increasing the life of a given kind of rope two or three times, by reducing the cutting action of the wires upon each other. The experiments indicate further that ropes which are subjected to reverse stresses may be expected to last only half as long as similar ropes worked under conditions which involve bending stress in one direction only.

Those of our readers who desire to study the subject fully may be referred to the text of Mr. Biggart's paper, and also to the recent paper by Mr. Adamson, where a series of useful deductions from the experiments will be found.

STRIKES AND LOCK-OUTS.

THE twenty-fourth Report of the Board of Trade Labour Department on Strikes and Lock-outs in the year 1911 has recently been issued. The number of workpeople affected (961,930) was the highest recorded during the period 1893-1911; and the loss in working days (10,319,591) has only been exceeded in four previous years—1893, 1897, 1893, and 1903. In connexion with the above figures we may quote those published for the first ten months of the current year in the *Board of Trade Labour Gazette*, as they show an unfortunate record, 1,386,978 workpeople having been involved in disputes, at a loss of 39,816,200 working days.

The principal strikes and lock-outs of 1911 were those amongst seamen, transport workers, and dock labourers, and the cotton-weaving industry. Questions of trade involved 46 per cent. of the workpeople thrown out of work, but trade union questions 39 per cent.

The aggregate number of working days available for the whole industrial population, exclusive of agricultural labourers, is estimated as 3,100,000,000, so the loss of time spread over the whole industrial population is computed as about one day per person. So stated the loss does not seem very considerable, but we prefer to represent the loss to the wage-earning classes in money, and if the moderate figure of half-a-crown is taken as representing the average value of a day's work the loss of 10,319,591 working days totals a sum of about 1,289,949*l*. The disruption of work, as we recently showed in our article on changes in rates of wages, moreover tends to lower wages over the whole country, whilst some trade is lost never to return. Employers and employed cannot too carefully consider these facts with a view to seeing whether less costly methods of settling disputes cannot be resorted to.

Disputes affecting about one-third of the total number of workpeople involved were settled by conciliation, arbitration playing a very subsidiary part, affecting only 7,485 workpeople.

This Report dealing with strikes and lock-outs, of course, furnishes no account of the number of disputes settled by conciliation and other methods without a stoppage of work.

It may be noted that sympathetic disputes directly and indirectly involved 6,773 workpeople at a loss of 72,025 working days.

In the building trade only 2,789 workpeople were directly or indirectly involved in disputes and the loss in working days was 74,962. These figures coincide very closely with those for 1908. In 1910 very few workpeople were involved in disputes (only 880), but the loss of working days was 35,475. In 1909 1,592 workpeople were affected, but the loss in working-days was even less, being but 19,060. In 1911 the disputes involving 49 per cent. of the workpeople in the building trade ended favourably to the workpeople, disputes involving 5·9 per cent. in favour of the employers, whilst those involving 45·1 per cent. were compromised. In this trade conciliation and arbitration settled the disputes affecting 1,822 employees.

POLICE ORPHANAGE, REDHILL.

It has been decided to erect an addition to the Provincial Police Orphanage, Redhill, Surrey. The new building will provide dormitories for forty-eight girls, with extensive bath and lavatory accommodation on each floor; eleven rooms for staff, new boiler-house, stores, etc. The cost of the works is 4,000*l*., and the architect, Mr. J. Augustus Souttar, of Bishopsgate, E.C.

LABOUR IN THE COLONIES.

FROM the monthly statement drawn up by the Emigrants' Information Office, 34, Broadway, Westminster, S.W., we take the following:—

In *Canada* there has been plenty of work lately for railway navvies and mechanics, but the demand for more hands has now ceased for this year. In *Sydney, New South Wales*, and suburbs the building and furniture trades have been fairly well employed, and competent men in these trades (except stonemasons) and strong railway labourers can get work. In *Victoria* there is a limited demand for bricklayers, carpenters, plasterers, cabinet-makers, and capable navvies; but no demand in the engineering trades. In *South Australia* the building trades continue to be very active. There is a fair demand for competent joiners and bench hands. Plasterers are in very strong demand, and good men can command up to 15s. per day. Bricklayers, brickmakers, galvanised ironworkers, plumbers, and masons (wallers) are in fair request. Stone-cutters quiet. The demand for painters has improved. In *Queensland* there is a good demand for strong men for railway construction work. The demand for mechanics and miners is fairly well met locally. In *Western Australia* there is not much demand for more mechanics, but in *Tasmania* there is a scarcity of general labourers for the construction of tramways in new districts, and for other public works. Very few competent mechanics are out of work in *New Zealand*, but there does not appear to be any special demand for more men. Employment in the building trades at *Johannesburg* continues brisk, and bricklayers and stonemasons are well employed; carpenters are always plentiful, and many plasterers and men in the engineering trades are idle. At *Pretoria* there is no demand. At *Cape Town* there is a continued demand for competent plumbers and plasterers. At *Durban* skilled plumbers and plasterers are scarce, but bricklayers are plentiful. A report has been received to the effect that the labour market in the *United States of America* is overstocked; that unemployment, especially among unskilled labourers, is very prevalent; and that competition for a vacant berth is as keen in New York as in London. British emigrants would be ill-advised to go to New York in search of employment, especially in view of the high cost of living and the heavy general expenses.

BELFAST BUILDERS' ASSOCIATION.

AT the monthly meeting of the Council of the County Borough of Belfast, held in the City Hall on the 2nd inst., the Town Clerk (Mr. Robert Meyer) said he had received the following resolution from the Belfast Builders' Association:—"The Belfast Builders' Association, having had brought under their notice the greatly increasing practice of the Works and Surveyor's Departments of the Corporation carrying out work of considerable magnitude by direct labour, desire to protest against the practice, as not only extravagant in cost, but also as an interference with the legitimate business of the members of this Association, and hereby appoint a deputation to place their views before the Corporation at their next monthly meeting." It was decided to receive the deputation, which consisted of the following members of the Builders' Association:—Messrs. R. B. Henry, J.P. (President); W. H. M'Laughlin, J.P. (Vice-President); Henry Martin, J. M'Ivor, J. O. Campbell, S. B. Thompson, W. J. Stewart, John Smith, C. Murdoch, James Lees, and J. Alfred M'Auley (Secretary).

Mr. R. B. Henry said the resolution passed by the Builders' Association was one of protest against the practice of the Works and Surveyor's and Tramway Departments of the Corporation carrying out work of considerable magnitude by direct labour. They held that this mode of carrying out work was not fair or reasonable to a body of contractors such as they were. They were not only contractors, but were also amongst the largest ratepayers in the city. They did not make this protest with entirely selfish motives, but they also made it as ratepayers and on behalf of the ratepayers, and they considered that the work that the Corporation had hitherto carried out by direct labour had been done in an extravagant manner, and had cost much more than

if they had let it out to tender. They also considered that municipal trading—or, if they liked to so call it, direct labour—interfered with their large business, and members of the Builders' Association felt that the City Council, representing the ratepayers' welfare, should pause before continuing the practice into which they had been gradually getting. They, as contractors, had been keeping in close touch with the work which the Corporation had been doing, and they regretted to say that the manner in which the various works had been carried out had cost 30 per cent. more than if they had let it out to contract. Was it likely that the members of the Corporation, in their individual capacities, would go on with work without first knowing the cost of it? Undoubtedly they would not. Under the system of direct labour or municipal trading they instructed the City Surveyor, Tramway Manager, or Works Superintendent to put in hand work of a large magnitude, and the cost was not known until the work was finished. They should bear in mind that a contractor who faithfully wished to carry out his contracts with credit to himself and his clients must give his personal supervision at all times; now, was it possible that the City Surveyor, Tramway Manager, and the Works Superintendent, if they attended to their proper duties, could in any sense of the word divide a certain amount of their time to carry out large works.

Mr. W. H. M'Laughlin, who also spoke, said the members of the Builders' Association honestly believed that the system of which they complained was costing more than the plan they advocated. There was a great deal of work which must perhaps be done by direct labour, and the deputation did not object to its being so done; but when large works—like the building of the City Hall, for instance—could be done by contractors at competitive prices, sometimes at a figure below the actual cost, why should the Corporation use direct labour?

The Lord Mayor said they were glad to see the deputation, and he was sure their views would be fully considered by the Corporation.

The deputation then withdrew.

MASTER BUILDERS' ASSOCIATION, WESTON-SUPER-MARE.

THE annual banquet of the Master Builders' Association, held at the Bungalow Hotel recently, under the Presidency of Mr. H. C. Sleep, was largely attended. To the toast of the "Naval and Military Forces of the Empire," proposed by Mr. G. W. H. Pearse, responses were made by Colonel Sidney Keen and Mr. J. S. Walker, while "The Urban District Council," honoured on the initiative of Mr. H. Butt, was acknowledged by Councillor H. Ward, Councillor J. J. Bond, Mr. S. C. Smith (Town Clerk), and Mr. H. A. Brown, C.E. (Surveyor). Dr. Duncan Grey proposed "The Association and Honorary Members," and replies were forthcoming from the President, Mr. C. Penny, Mr. C. Addicott, and Mr. E. Stradling.

GENERAL BUILDING NEWS.

POLICE BUILDINGS, INVERNESS.

The enlarged buildings for the Inverness police have now been completed. The buildings have been entirely reconstructed, the interior is on modern lines, and the old frontage has been retained. The new work has been executed from the plans of Mr. R. I. Macbeth, architect, at an estimated cost of 4,000*l*. The contractors were:—Mason, Mr. Alexander Campbell; carpenters, Messrs. Alexander Anderson & Son; slater, Mr. A. C. Fraser; plasterer, Mr. William Johnstone; plumber, Mr. A. J. Russell; painter, Mr. D. Macdonald, Bridge-street; ironworks, Rose-street Foundry Company, Ltd.; heating, Messrs. Mackenzie & Moncur, Edinburgh.

NEW DOCK, NORTH SHIELDS.

Messrs. Smith's Dock Company, Ltd., have had a new dock erected for them at North Shields under the direction of Messrs. Moncrieff & Co., of Newcastle. The dock is 525 ft. long, and the entrance is 71 ft. wide. The contractors for the work were Sir John Aird & Co., and resident engineer was Mr. Goldson.

THE FLEETWAY HOUSE, E.C.

These new premises for the Amalgamated Press, Ltd., were recently inaugurated by Lord Northcliffe. The Fleetway House is situated in Farringdon-road, and the area of the site is 22,000 sq. ft., the height of the building from basement to roof 90 ft. The architect was Mr. Herbert O. Ellis, of Fenchurch-street, E.C.; the quantity surveyors were Messrs. John Leaning & Sons, John-street, W.C., associated with Messrs. Robinson & Roods, New-court, Carey-street; the consulting electrical engineer was Mr. Albion T. Snell, 5, Lawrence Pountney-hill, E.C.; the general contractors were Messrs. Allen Fairhead & Son, Enfield; and the clerk of works was Mr. J. Spooner. The following firms were concerned in the erection or equipment of the building:—Steel construction, Messrs. R. Moreland & Son, Ltd., Goswell-road, E.C.; asphalt, the Limmer Asphalte Paving Company, Ltd., Caxton House, S.W.; glazed brickwork, the Middleton Fireclay Company, Ltd., 27, Chancery-lane, W.C., and the Leeds Fireclay Company, Ltd., Norfolk-street, Strand; carving, Mr. C. H. Mabey, 150A, Vauxhall Bridge-road, S.W.; fireplaces, Messrs. George Wright, Ltd., Queen Victoria-street, S.W.; fireproof partitions, Messrs. F. Jones & Co., Ltd., Perren-street, Ryland-road, N.W.; fire appliances, Messrs. Mather & Platt, Ltd., Queen Anne's-chambers, Westminster, S.W.; fire alarms, the Associated Fire Alarms, Ltd., Jewin House, Redcross-street, E.C.; flooring, the Durato Asbestos Flooring Company, Ltd., 26A, Soho-square, W.C., and for the rubber paving the New York Belting and Packing Company, Ltd., Southampton-row, W.C.; glass, the British Luxfer Prism Syndicate, Ltd., Hill-street, Finsbury, E.C.; granite and marble, Messrs. Fenning & Co., Ltd., Palace Wharf, Rainville-road, Hammersmith, W.; heating, Messrs. Richard Crittall & Co., Ltd., Wardour-street, W.; lifts, the Otis Elevator Company, Ltd., Queen Victoria-street, S.W., and Messrs. Smith, Major, & Stevens, Ltd., Queen's-road, Battersea, S.W.; lighting, Messrs. Rashleigh Phipps & Co., Oxford-street, W. (the Indirect light fittings are the registered design of the Adnil Electric Company, Ltd., Adnil Building, Artillery-lane, E.C.); ornamental plastering, Messrs. J. M. Boekbinder & Sons, Ltd., Crown-place, Kentish Town, N.W.; sanitary work, Messrs. George Jennings, Ltd., Lambeth Palace-road, S.E.; sanitary fittings, Messrs. Shanks & Co., Ltd., New Bond-street, W.; Portland stone, Mr. F. J. Barnes, Nine Elms-lane, S.E.; tiles and terazzo work, Messrs. Diespeker & Co., Ltd., Holborn-viaduct, and Messrs. Rust's Vitreous Mosaic Company; room decoration, Messrs. H. H. Martyn & Co., Cheltenham, and Messrs. Ropley, Duke-street, Manchester-square, W.; locks and fittings, Messrs. Kaye & Sons, Ltd., High Holborn, W.C.; window gearing, Messrs. W. & R. Leggott, Ltd., High Holborn, W.C.; vacuum cleaning, the British Vacuum Cleaning Company, Ltd., Parsons Green-lane, S.W.; artesian well, Messrs. Le Grand & Sutcliff, Bunhill-row, E.C.; electric clocks, the Synchronome Company, Clerkenwell-road, E.C.; lightning conductors, Messrs. J. W. Gray & Co., Philpot-lane, E.C.; flagstaff, Messrs. Piggott Brothers & Co., Ltd., Bishopsgate, E.C. The exterior bracket clock-case, with some interior metal-work for lift enclosures, etc., was supplied by Messrs. W. T. Allen & Co., 132, Queen Victoria-street, E.C.

TRADE NEWS.

Mr. William Glasier (of Pall Mall East) announces the sale of the freehold estate known as "Priory Lodge," Barnes, which covers an area of upwards of 120,000 ft., with frontage to the main road, immediately opposite the old Parish Church of St. Mary, Barnes.

Under the direction of Messrs. George Kay & Co., architects, Douglas, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air-inlets, has been applied to Finch-hill Church, Douglas, Isle of Man.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 to 1909.

AT Tuesday's meeting of the London County Council the following applications under the London Building Act were dealt with. (The names of the applicants are given in parentheses):—

Lines of Frontage and Projections.

Clapham.—Erection of a building at No. 146, High-street, Clapham, abutting also upon Wirtemberg-street (Mr. J. S. Beard for Mr. S. H. Beard).—Consent.

Dulwich.—Erection of a one-story building at the Grove Hotel, on the northern side of Dulwich Common-road, Dulwich (Messrs. Watson & Ellwood for the Norman Engineering Company).—Consent.

Finsbury, East.—Illuminated advertisement case at the Old-street station of the City and South London Railway, next to City-road (Mr. T. C. Jenkin).—Consent.

Hampstead.—Retention of an iron landing and step-ladder at the New Kilburn Empire, on the south-western side of Kilburn-priory, Hampstead (Mr. C. Gulliver).—Consent.

Hampstead.†—Addition to a conservatory on the eastern side of Fitzjohn's-avenue, Hampstead (Mr. S. C. Lathbridge).—Refused.

Marylebone, East.—Erection of an iron and glass shelter at the premises of Messrs. Waring & Gillow, Ltd., Castle-street East, St. Marylebone (Mr. R. F. Atkinson for Messrs. Waring & Gillow, Ltd.).—Refused.

St. Pancras, South.—Erection of a projecting crane at the premises of Messrs. Voile & Wortley, Bidborough-street, St. Pancras (Mr. H. B. Hale).—Consent.

Westminster.—Retention of an illuminated sign at Caxton House, Tothill-street, Westminster (Cabins, Ltd.).—Consent.

Westminster. — Erection of eight oriel-windows and a projecting cornice at a proposed building to abut upon Millbank and Dean Stanley-street, Westminster (Messrs. Gordon & Gunton for the British American Tobacco Company, Ltd.).—Consent.

Width of Way.

Finsbury, East.—Retention of lavatory buildings in the yard of Messrs. Carter, Paterson, & Co., Ltd., abutting upon the northern side of Pear Tree-street, Finsbury (Messrs. Carter, Paterson, & Co., Ltd.).—Consent.

Woolwich.—Erection of a cinematograph building to abut upon Beresford-street, Beresford-square, and Salutation-alley, Woolwich (Mr. R. M. Allen).—Consent.

Width of Way and Lines of Frontage.

Kensington, South.—Entrance steps and a coal-bin at No. 4, Onslow-mews East, South Kensington (Messrs. E. K. Wilson & Sons, Ltd.).—Consent.

St. George, Hanover-square.†—Erection of projecting features at the Berkeley Hotel, Piccadilly, next to Berkeley-street (Mr. R. Griggs for the Berkeley Hotel Company, Ltd.).—Consent.

Width of Way and Widening of Street.

Walworth.—Widening of Tisdall-place and Hearn's-buildings; erection of a house on the south-eastern side of Hearn's-buildings, and a fence on the south-western side and a fence on the north-eastern side of Elsted-street, each at less than the prescribed distance from the centre of the roadway of the street; and erection of a house on the south-western side of Tisdall-place with an irregular open space about such building (Mr. R. Dickins).—Consent.

Windsore Station, Canadian Pacific Railway Company, Montreal.

An illustration is here given of the Windsore Station, of the Canadian Pacific Railway Company at Montreal, the tunnels and subways of which have been waterproofed with Ceresit, supplied by the British Ceresit Waterproofing Company, Ltd.

Dwellings for the Working-Classes.

Deptford.—Blocks of dwelling-houses upon a site on the eastern side of Brookmill-road, Deptford (Mr. E. Cannell).—Consent.

Uniting of Buildings.

Brixton.—Uniting of Nos. 117 and 119, Ferndale-road, Brixton (Mr. E. Hastie).—Consent.

City of London.—Uniting of Nos. 14, 16, and 18, Moorgate-street, City, with No. 20, Moorgate-street, and the "White House" abutting upon Telegraph-street (Mr. L. U. Grace).—Consent.

City of London.—Opening in the party wall at the ground-floor level between Nos. 27 and 28, Falcon-square, City (Mr. C. Gordon Smith for Messrs. Watts, Payne, & Co.).—Consent.

City of London.—Formation of openings in a division wall at No. 15, Aldersgate-street, City (Mr. H. Knight).—Consent.

City of London.—Uniting of No. 12, Holborn and No. 1, Furnival-street with Nos. 2 and 3, Furnival-street, City, by means of openings at the first and second floor levels (Messrs. Gilbert & Constanduros).—Consent.

City of London.—Floors of special construction in lieu of iron doors to an opening in the division wall at Nos. 5 to 11, Holborn (Art Metal Construction Company, Ltd.).—Consent.

City of London.—Uniting of No. 14, Blomfield-street and No. 46, New Broad-street, City, by means of an opening at the ground-floor level (Mr. A. R. Conder for the W. T. Henley's Telegraph Works Company, Ltd.).—Consent.

City of London.—Formation of an opening between Nos. 23 and 24, Old Bailey, City (Messrs. M. W. King & Sons).—Consent.

Finsbury, Central.—Openings and the formation of openings in the party wall between Nos. 102 and 104 and Nos. 105 and 103, Clerkenwell-road, Finsbury (Mr. E. F. King).—Consent.

Finsbury, Central.—Uniting of Nos. 60 and 61, Spencer-street, Clerkenwell (Mr. R. Shaw).—Consent.

Finsbury, Central.—Formation of four openings exceeding the statutory size in division walls at proposed new workshops and offices, Aylesbury-street and Jerusalem-passage, Finsbury, and the construction of steel-framed division walls 14 in. thick (Mr. J. G. Gridley for Messrs. E. Pollard & Co., Ltd.).—Consent.

Hampstead.—Formation of an opening between Nos. 477 and 479, Finchley-road, Hampstead, at the ground-floor level (Mr. S. C. Lathbridge for Mr. A. F. Cherry).—Consent.

Holborn—Openings, exceeding the statutory size, in a division wall at the premises of Minerva, Ltd., North-crescent, Tottenham Court-road (Messrs. Dennison, Kett, & Co., Ltd.).—Consent.

Holborn.—Retention of openings in a party wall at Nos. 235 and 236, Tottenham Court-road, Holborn (Mr. F. H. Shann for Lloyds Bank, Ltd.).—Consent.

Islington, West.—Openings exceeding the statutory size in division walls at the premises of Messrs. J. Tylor & Sons, Ltd., Tileyard-road, Islington (Mr. E. L. Hall for Messrs. J. Tylor & Sons, Ltd.).—Consent.

Kennington.—Formation of an opening between Nos. 219 and 221, Wandsworth-road, Kennington, at the ground-floor level (Mr. E. Hastie for Messrs. Smith & Chapple).—Consent.

Kennington.—Formation of an opening in the party wall between Nos. 190 and 192, Wandsworth-road, Kennington (Messrs. Greenfield & Cracknall for Mr. F. C. Greenfield).—Consent.

Marylebone, East.—Formation of an opening in the party wall at the first-floor level between Nos. 33 and 34, Union-street, St. Marylebone (Mr. John Slater for Messrs. Abdulla & Co.).—Consent.

Paddington, South.—Formation of an opening 6 ft. wide by 3 ft. 6 in. high, with double iron shutters, in a division wall at the first-floor level next to the staff dining-rooms at the premises of Messrs. W. Whiteley, Ltd., Douglas-place, Bayswater (Messrs. John Belcher, R.A., and J. J. Joass, and Milners' Safe Company, Ltd., for Messrs. W. Whiteley, Ltd.).—Consent.

St. George, Hanover-square.—Formation of openings between Nos. 407 and 409, Oxford-street, at the first and second floor levels (Messrs. Smith & Co. for Messrs. Naylor Brothers (London), Ltd.).—Consent.

Whitechapel.—Formation of openings exceeding the statutory size in the division walls of a building on the southern side of Fashion-street, Whitechapel, and to the provision of armoured doors in lieu of iron doors to such openings (Messrs. Grant & Dolley, and Mather & Platt, Ltd.).—Consent.

The recommendations marked † are contrary to the views of the Metropolitan Borough Councils concerned.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

AIRDRIE. — Domestic science centre, etc. (900*l.*), for the Airdrie School Board.

Alfreton.—Proposed hall for St. Martin's Mission; Rev. T. A. Moxon, Vicar, Parish Church, Alfreton.

Amersham.—Additions to grammar school (2,300*l.*) Mr. W. Riley, architect, County Hall, Aylesbury.

Atherton.—Extensions to works, Bag-lane, for Mr. James C. Prestwick, bolt and nut manufacturer.

Ballyward.—Dispensary residence; Clerk, Guardians' Offices, Banbridge.

Barnsley.—Proposed institute; Vicar, St. John's Church, Barnsley.

Barrow-in-Furness.—Proposed school; Mr. A. Hawkridge, Education Offices, Barrow.

Batley.—Additions to Bottom Mill for Messrs. G. & J. Stubley, Ltd., woollen manufacturers.

Belvedere.—School (600 places), Lower-road; Mr. A. T. Flux, Education Offices, Erith.

Bishop Auckland.—Offices for Rural District Council and Guardians (3,200*l.*); Mr. S. Adams, Auckland Guardians' Offices, Bishop Auckland.

Blackburn.—Tower to St. Silas's Church (6,000*l.*); Messrs. Austin & Paley, architects, 24, Castle Park, Lancaster.

Blackpool.—Alterations to premises at corner of Wellington-road for the Blackpool Industrial Co-operative Society.

Braintree.—Additions at new swimming-bath (336*l.*); Mr. W. Potter, builder, Braintree.

Brierley Hill.—Infants' school, Moor-street (350 places); Mr. J. Hutchings, Architect, County Education Offices, Stafford.

Bromsgrove.—Proposed conversion of isolation hospital into children's home; Mr. H. D. Holloway, Clerk, Guardians' Offices, Birmingham-road, Bromsgrove.

Caledon. — Dispensary residence; Clerk, Guardians' Offices, Dungannon.

Carnarvon.—Twenty-five workmen's dwellings; Mr. E. Hall, Surveyor, Town Hall, Carnarvon.

Chelmsford.—Houses, Danbury, Sandon, and Little Baddow (3,000*l.*); Mr. J. Dewhurst, Surveyor, Rural District Council Offices.

Chesterton.—Cookery centre; Mr. H. Johnson, builder, 80, London-road, Chesterton.

Claydon.—School; Mr. W. T. Watkins, Education Offices, Ipswich.

Cold Norton.—School (1,115*l.*); Mr. J. Rayner, builder, East Hanningfield, Chelmsford.

Consett.—Proposed aisle to church (1,500*l.*); Vicar, Parish Church, Consett.

Coventry.—Second part of housing scheme (10,560*l.*), and enlargement of tramway depôt; Mr. J. E. Swindlehurst, Engineer, Town Hall, Coventry.

Cramlington. — Remodelling Cramlington Colliery Council School (596*l.*); Mr. J. Carruthers, builder, Tynemouth.

Deal.—Pavilion in front of Victoria Palace; Mr. T. C. Golder, Surveyor, Town Hall, Deal.

Elsecar.—Additions to Market Hotel for Mappin's Masborough Old Brewery Company, Ltd., Greasborough-road, Masbro', Rotherham.

Essex.—School, Brentwood, and additions to school, Hadleigh; Mr. F. Whitmore, architect, Duke-street, Chelmsford.

Fishlake.—Proposed restoration of church; Vicar, St. Cuthbert's Church, Fishlake.

Foot's Cray.—School (140 places) and alterations to existing school for the Managers, Foot's Cray and Chislehurst Church School.

Gloucester. — Vicarage House (1,500*l.*); Vicar, St. Luke's Church, Gloucester.

Govanhill. — School (18,000*l.*): Mr. A. Balfour, architect, 110, Mains-street, City, Glasgow.

Greetland (Halifax).—Sunday-school; Rev. G. A. V. Flower, Vicar, St. Thomas's Church, Greetland.

Haltwhistle.—Proposed children's home; Mr. T. Dryden, Clerk, Guardians' Offices.

Heysham.—Houses and shops, Main-street and Barrow-lane, for the Lancaster Co-operative Society.

Hove.—Plans have been passed for the erection of five houses in Glendale-road, and for alterations to "The Brambles," Bigwood-avenue, for Mr. W. H. Overton.

Kent.—Special instruction centre, Sevenoaks, and improvements to school, Wilmington; Mr. W. H. Robinson, Architect, Kent Education Offices, Caxton House, Westminster, S.W.

Lifford (Birmingham).—Stables (3,458*l.*); Messrs. T. Elvin & Son, Naden-road, Sohohill, Birmingham.

Liscard (Cheshire).—Proposed additions at hostel at Y.W.C.A. Institute and Holiday Home (1,500*l.*); Miss M. Pescod, Secretary, Withenfield House, Withen's-lane, Liscard.

Malton (Yorks).—Laundry at workhouse; Messrs. H. Oldfield & Son, Bridgefoot, Malton.

Middlesbrough.—Premises, corner of Albert-road, for Messrs. Freeman, Hardy, & Willis, boot and shoe manufacturers, 57, Rutland-street, Leicester.

Montrose.—Proposed improvement of Burgh Hall (3,000*l.*); Surveyor, Burgh Hall, Montrose.

Nechells (Birmingham).—Stables (1,711*l.*); Mr. J. E. Harper, builder, 76 to 80, Lombard-street, Birmingham.

Newsham. — Proposed mission buildings; Trustees, Presbyterian Church, Waterloo-road, Blyth.

Newton Abbot.—Proposed additions at workhouse; Mr. F. Horner, Clerk, Guardians' Offices, Newton Abbot.

Newtown (Mon.).—Welsh memorial offices for the Welsh National Memorial Association.

North Seaton.—School; Mr. C. Williams, County Education Offices, Newcastle.

Ongar.—About 168 houses; Mr. W. N. Jarvis, Surveyor, Rural District Council Offices, Ongar.

Pemberton. — Picturedrome near Halfway House, Ormskirk-road, for Mr. G. Wadsworth.

Pittodrie.—Pavilion (900*l.*); Secretary, Caledonian Golf Club, Aberdeen.

Prestatyn (Flint).—Workmen's dwellings; Mr. Fred Wilkinson, Surveyor, Urban District Council Offices, Prestatyn.

Rhuallt (Flintshire).—School; Mr. J. Bevan Evans, County Education Offices, Mold.

Roomfield.—Alterations to Manse for the Trustees, Roomfield Baptist Church.

Rotherham.—Proposed extensions to tram-car shed, Rawmarsh-road; also enlargement of tuberculosis dispensary; Mr. E. B. Martin, Engineer, Town Hall, Rotherham. Plans have been passed as follows:—Eight houses, Lord-street, for Mr. B. Bool; miners' aid and rescue station, St. Ann's-road, for the Rotherham and District Rescue Station Board; four houses, Church-street, Kimberworth, for Mr. W. Lodge. A plan has been lodged for eleven houses, Gerard-road, by Messrs. Ball & Waite.

Rugby. — Garages, Pennington-street, for Messrs. Samuel Robbins, Ltd., furniture and cycle manufacturers, Rugby.

Rurtherglen.—Additions to works for the River Bolt and Nut Company, Ltd.

Sheerness.—Enlargement of manual institution centre (677*l.*); Mr. A. W. Phillips, builder, Sheerness.

Sheffield.—The following plans have been passed:—Addition to premises, Newhall-road and Carlisle-street, for Messrs. Cammell, Laird, & Co.; power-house, Broughton-lane, for the Brightside and Carbrook Co-operative Society, Ltd.; four houses, Springvale-road, for Mr. Parkin; four houses, Vale-road, for Miss Hewitt; additions, Steam Clock Inn, Newhall-road and Brightside-lane, for Messrs. Strouts' Brewery Company, Ltd.; six houses, Linburn and Osmaston roads, for Mr. H. Holland; alterations to premises, Bastock-road, for Messrs. G. A. Shipman & Co., Ltd.; alterations to premises, Button-lane, for Messrs. J. & F. S. Marsden, Ltd.; additions, Hermitage Inn, London-road, and Hermitage-street, for Messrs. S. H. Ward & Co., Ltd.; four houses, Horndean-road, for Mr. J. H. Smith; six houses, Eccleshall-road, for Messrs. J. E. & A. S. Wilbraham; additions to premises, Staniforth-road, for Messrs. Cravens, Ltd.; additions to premises, Warren-street, for Messrs. W. Spencer & Co., Ltd.; additions to premises, Rockingham-lane, for the Sheffield Electrical Engineering Company, Ltd.; alterations to premises, Eyre-lane, for Messrs. Newby & Sons, Ltd.; seven houses, Exley-avenue, for Mr. H. E. Fern; four houses, Redmires-road, Sandygate, for Mrs. Peace; additions, Old Shakespeare Inn, Gleadless and Well roads, for Mr. W. H. Ward; additions to premises, Mowbray-street, for Messrs. W. Turner & Sons, Ltd.; cinematograph theatre, Spital-hill, for Mr. W. T. Gent; cinematograph theatre, Cravens and Catley roads, for Mr. J. P. Earl.

Silverdale.—Cookery centre; Mr. E. Hollingshead, Education Offices, Wolstanston.

South Chingford.—School (4,117*l.*); Messrs. Mattock Brothers, builders, Winkfield-road, Wood Green, N.

Stafford.—Works, near Doxey-road railway bridge, for the Universal Grinding Wheel Company, Sheffield.

Sunderland.—School: Mr. H. Reed, Education Offices, Sunderland.

Todmorden.—Alterations to Cattle Market Hotel for Massey's Burnley Brewery, Ltd., Westgate, Burnley.

Torquay.—The following plans have been passed:—Seventeen houses, Hingston-road, for

* See also our list of Competitions, Contracts, etc., on another page.

Mr. W. A. Perring; additions to laundry, Newton-road, for the Devon Steam Laundry; four houses, Redden Hill-road, for Mr. H. Cruse; additions to Hele Cross Laundry, for Messrs. Gridley & Luxton; picturedrome at Allacombe for Mr. R. Tucker.

Tyldesley.—Turbo and boiler house, Union-street, for Messrs. C. Wright & Co., Ltd., cotton spinners, Barnfield Mill, Union-street, Tyldesley.

Walsall. — Plans have been passed as follows:—Factory, Wolverhampton-street, for Messrs. J. Bailey & Co., Ltd.; warehouse, Lower Rushall-street, for Mr. William Burst; additions to premises, Stafford-street and Green-lane, for Messrs. J. Birch & Sons; warehouse, Stafford-street, for Mr. W. Oswin; electric theatre, Bridge-street, for Mr. F. H. Dore; additions to factory, Bath-street, for Messrs. H. Moseley & Sons.

Westbrook (Margate).—Bathing pavilion (5,500*l.*); Mr. E. A. Borg, Surveyor, Town Hall, Margate.

Willington (Durham).—Forty houses; Mr. J. H. Armory, builder, Lydia-street, Wellington.

Woodford. — Special instruction school (1,748*l.*); Mr. F. J. Coxhead, builder, Bulmer-road, Leytonstone, E.

York.—Proposed offices for Electricity and Tramway Departments; Mr. F. W. Spurr, Surveyor, Town Hall, York.

Yorkshire (West Riding).—Extensions at school, Mexborough (730*l.*); enlargement of school, Oulton-with-Woodlesford (1,260*l.*); additions to schools, Outwood (620*l.*), and Wrenthorpe (620*l.*); and temporary school, Woodlands (1,150*l.*); Mr. J. Stuart, architect, County Hall, Wakefield.

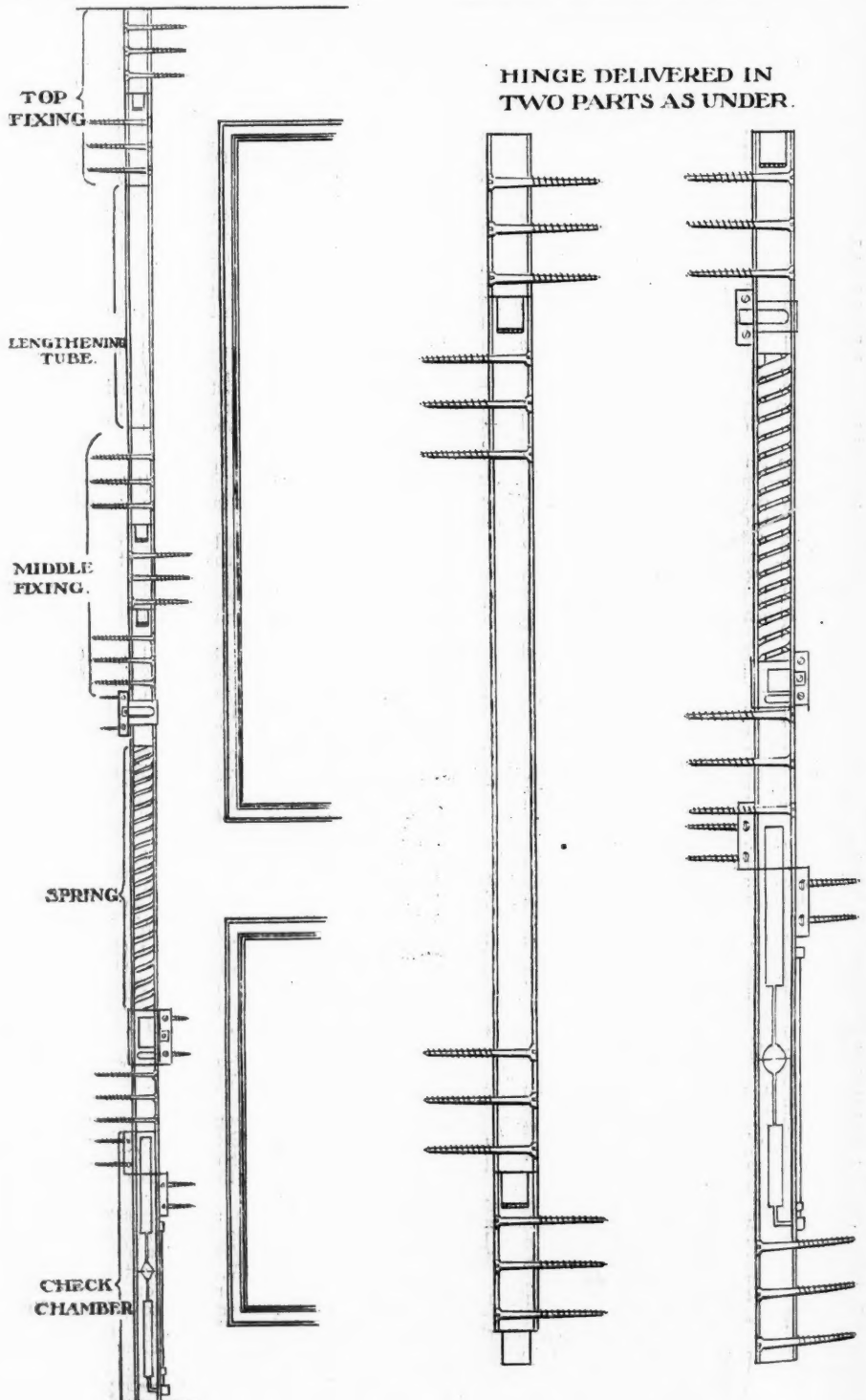
FOREIGN AND COLONIAL.

Building Trade in Morocco.

Mr. Consul Madden, in his joint Report for the years 1910-11 on the trade of Casablanca (Morocco), states that owing to the continued expansion of the town and environs the demand for building materials of all sorts is very much on the increase. Cement, lime, and plaster were imported in 1911 to double the value of the importations in 1910. Cement comes chiefly from France and Belgium. Belgian cement arrives in wooden casks of 180 kilos. weight, costing from 7 fr. 50 c. to 8 fr. per cask (called artificial Portland cement), c.f. Casablanca, payment at three months or 2½ per cent. discount for cash. French cement is about the same price. British is better, but rather dearer, at about 8s. 3d. the cask of same weight. Lime chiefly comes from Belgium and France, and plaster from France and Spain. As the population, both native and European, is still largely increasing new suburbs of the villa class of house are appearing on all sides, mostly flat-roofed constructions on the ground floor only, but some in European style, quite altering and greatly improving the environs of the town, gradually driving out of existence the mud-hut Moorish villages that used to cluster round the town, these giving place to native settlements comprising small stone rooms. Accommodation for newcomers is very difficult to obtain, so that on all sides numbers of wooden shanties are springing up and are immediately occupied. Building is very expensive owing to the cost of materials, which are scarce by reason of the immensely increased demand, and owing to wages being very high, as a result of the cost of living, and the relative scarcity of skilled workmen. Notwithstanding the activity displayed in the building trade, all rents have gone up considerably and are always rising. In town small houses of four to five rooms (including kitchen) are let at 90 fr. to 100 fr. per month. Houses of seven to nine rooms fetch 125 fr. to 150 fr. and even 200 fr. per month. Larger houses are let at from anything between 250 fr. to 500 fr. (10*l.* to 20*l.*) per month. Outside the town small villas of four to five rooms, with a small garden patch and yard at back, let for 125 fr. to 150 fr. per month. The labouring class pay about 1*l.* per month for a single room dwelling of the type above referred to. At the beginning of the season 1910-11 the main streets were taken up in turn for the purpose of installing new drains. The benefit of this has undoubtedly been felt in the far better state of health of the population this year, though during the work it was an anxious time, as the old Moorish drains had been partly useless and in shocking condition for a great number of years.

Bombay Waterworks.

The original supply of water for the city of Bombay came from Lake Vehar, and was inaugurated in 1859, the supply amounting to 7 million gallons daily, which was increased in 1865 to 10½ million gallons by means of a second pipe line. In 1879 an additional supply of 3½ million gallons was obtained from Lake Tulsi, and in 1892 the Tansa scheme was completed, giving a further supply of 17½ million gallons daily. Owing to the increase of population and the large quantities of water used for municipal and trade purposes, the existing supplies are very inadequate, and works are now about to be undertaken for increasing them, and, at the same time, of improving the quality of the water. In the first place, Vehar Village is to be removed, so as to take away a source of pollution, the lake is to be fenced in and weeds removed, additional filter-beds are to be built at the same place, and a storage reservoir of 4,000,000 gallons capacity for the filtered water is to be constructed in Bombay. At the Tansa works, four villages are to be removed from the catchment area, and the Tansa Dam is to be raised by 7 ft., which, together with an additional 48-in. main, will permit the supply of water to be brought up to double the amount hitherto available. The project now brought forward also includes the construction of two large service reservoirs, one at Ghatkopar capable of storing from seven to ten days' supply, and the other on Golangi Hill, with the capacity of 20 million gallons. The total cost of the works is estimated at 615,466*l.*, by Mr. H. J. Trivoss Smith, the Water Engineer to the Corporation of Bombay.



Section of Hinge.

TRADE CATALOGUES.

The Guildecor Hinge Company, Ltd., 29, Newman-street, Oxford-street, London, W., send us a booklet describing the Guildecor hinge. This contrivance is a jointed steel barrel, extending from the floor to the top of the door; a hinge, in fact, which, in addition to its cardinal function, effectually seals the space between the door and the frame, rendering it soundproof, draughtproof, and sightproof. In its simplest form it consists of two or three metal joints connected by a wood extension rod, the whole forming a rule joint. Where a self-closing door is required, the hinge is supplied with a patent spring contained in a steel barrel, extending the whole length of the door. In its third and most elaborate form, it is supplied with a check action in addition to the spring: the mechanism in this case, as well as in the former, being contained in the barrel of the hinge. The Guildecor wind bolt, another specialty of this firm, is designed to obviate the necessity of employing a powerful spring, where it is required to hold swing doors in position against the wind. A door so hung requires the application of considerable force to open it; the Guildecor wind bolt enables a free and easy working spring to be used, with only sufficient tension to bring the door back to its closed position, where it is automatically bolted.

BRISTOL SOCIETY OF ARCHITECTS:

ADDRESS TO YOUNG ARCHITECTS.

THE second sessional meeting of this Society was held on Monday evening, November 11. Owing to the reconstruction and improvement scheme at the Fine Arts Academy being in progress—the headquarters of the Society—the meeting was held at Messrs. Fortt's, No. 6, Royal-promenade, Clifton, the President, Mr. G. H. Oatley, F.R.I.B.A. presiding.

The Hon. Secretary announced the election of seven new members.

Mr. Graham C. Awdry, F.R.I.B.A., read a paper entitled "Some Practical Remarks to Pupils, Assistants, and Young Architects." In the course of his remarks he said: "The articled pupil should make up his mind from the very first that he has to be a thinking, responsible individual, and not a mere fragment of the machinery of an office. He must therefore take trouble to find out as he goes along day by day and hour by hour the meaning of what he sees or hears, and the reasons why certain things are done. Let him determine to put aside any feelings of pride he may have and freely ask of those who know. . . . As there is often but little time to read up in later life the many books that are available on the various subjects required to be known the pupil should devote all the time he can to reading them in his early days. As he advances, and especially when he is preparing for examinations, he will find the taking of notes as he reads a most useful aid to memory. I have found this myself from actual experience. But he will ask himself: What shall I note down? All the book is valuable information. What shall I select? "Well," I said to myself when I was reading for examinations, "I come across a lot of things I knew before, and I don't think I shall forget them easily, but here and there I find things I do not know; after only reading these once probably I shall forget them." So I determined to make notes of all the things I didn't know before. I got a note-book for each subject. One for history of architecture, one for materials, one for carpentry and joinery, one for sanitary engineering, and so on, and after reading a passage and understanding it, and the illustrations applying to it, I put the substance of it shortly into my own words, underlining the most important, and sketched the illustrations in the margin entirely by hand, so that the fact of looking carefully at the detail as I drew it might impress the thing on my mind. I kept these note-books, and read them over and over again; for the entries, being so condensed, didn't occupy so many pages as you might suppose; and even now I find them useful to refer to occasionally.

Always carry a small thin sketch-book in your pocket, and make sketches of everything good, whether old or new, that you come across. The grouping of roofs, little bits of construction and detail, clever fittings and fastenings; and make notes on colour and the composition of colour schemes.

The Assistant.

As the pupil developes into the assistant he ought to endeavour to make himself an assistant in the real full meaning of the word, and not a mere drawing machine. Those of you who are not yet practising on your own account will find when you come to that, and happen to be really busy, how very much more desirable is the assistant who is capable of thinking out and putting through the office what is wanted by the chief than the assistant who is merely a drawing machine, even though a very excellent one, because if long explanations have to be given to him as to how he must set about the matter. . . . Then he will often find that he could have made the detail drawing himself with his own hand and done it more surely and correctly (though perhaps more roughly) in the time that he has expended in showing the assistant how to set about it. We know, for instance, how much of the full size detail drawing of a batch of joinery must be done all over again when the thoughtless one has allowed nothing for the planing of surfaces, and has shown all the finished thicknesses fitted together, and every one of them about $\frac{1}{8}$ in. too thick; or when the careless one has omitted to refer to specification or quantities for the scantlings and thicknesses contracted for, and has simply enlarged a scale drawing without any regard for the size of material, or for the value of it, as provided for by the contract.

As the assistant improves, if not from the very first, he ought also to get into the way of writing a proper business letter, one that will be concise, properly punctuated, free from ambiguities and loop-holes, free from undue committal. An architect in busy practice may not have time to write or even to dictate any but the more important letters, and a careful assistant ought to be capable of composing and writing for him, at his request, many of the less important ones, bringing them to him all together for his signature; but if they are carelessly composed, and the intention badly expressed so that the precise meaning is not clear, the hard-pressed architect will have to alter them, sometimes from beginning to end, and much of his valuable time will be wasted. . . .

Hints on Surveying Work.

Let me advise the young surveyors to go to work in this, as in all the numerous other branches of our profession, on a definite system and in a methodical manner, not in a haphazard fashion, as so many do. If you will keep to one settled way of proceeding you will find you will rarely be hung up afterwards in plotting your plan, by finding out that you have omitted to take an important measurement, and so must either go on another long railway journey, perhaps, incurring much extra expense of time and money, or run the risk of much trouble and increased cost in the building operations hereafter. Make your sketches carefully, with care as to the proportion of length of one line to another, the area of one room proportionate to that of the preceding one, and so on, for not only can you by this means avoid the annoyance of discovering as you go further and further in rambling premises that there is no space left on your plan into which to fit the last rooms—the remaining pieces of the puzzle—but you will also have the correctness of your sketch to help confirm the correctness of your plan when you have drawn it to scale in the office. You will find that you have sketched the angle formed by the junction of two walls as a slightly obtuse angle, or a slightly acute angle, and that the diagonal, or tying measurements also, when plotted, produce this result; whereas if you had carelessly sketched it—as at a first glance it appeared—a right angle you might wonder whether, after all, you had or had not made a mistake in your dimensions.

I do not think many assistants of young practising architects take the precaution of testing their measuring tapes, but it is of great importance to do it, especially if they are to be used for accurate surveys of town property. Many a tape that has had a good deal of use in its day will be found to have stretched 6 in. in its length of 66 ft. If you are taking a frontage of 132 ft. there will be an error of a foot, and if the site is being sold or let by the foot of frontage at a high price the difference may amount to a large sum. For this reason it is well never to use a borrowed tape for an important survey. There is also a little mistake in calculation possible when using a tape that has by constant extension become strained beyond its proper length.

Unfortunately, I myself was once a delinquent. I wonder if any of you here have had a similar experience? Probably you are wiser than I was. It was a good many years ago. I was surveying some building land in a country town, fronting on a road and bounded at each extremity by a road at right angles to the frontage road. I had previously tested my tape, the only one available, and found it was 9 in. too long. I measured the frontage—some few hundred feet—and entered the total length as read from the tape in my book, with a note that the tape was 9 in. too long. A few days afterwards I laid down to scale the frontage for the purpose of dividing it into plots for a terrace of attached houses, and as the tape was 9 in. too long I deducted 9 in. from every tape length and a proportionate amount from the odd dimension. Well, when some weeks later I came to peg out the plots on the actual land, to my astonishment I found, after starting at one end of the frontage and giving 25 ft. or so to every house, I had a surplus of 15 ft. of frontage at the other end of the row. Not enough for another house and yet I had to do something with it. Ultimately I let it go with the end or corner house as garden ground, thus increasing the value and rent; but what puzzled me was how came there to be a surplus? I hunted up my papers and carefully examined my survey. I found the old tape I had used when I first measured the land and which was the only one obtainable at the time, and tested it again, finding I was quite right, and that it actually was 9 in. too long. Then I reckoned up the deduction I had made of 9 in. from every tape-length measured, and that was correct, and the total deduction I noticed was, curiously, exactly half the surplus frontage to an inch. Suddenly I saw my error. The tape was too long, so I had deducted from the readings the extra 9 in. of length. I ought to have added it on. The result of deducting it had been to double the difference in the wrong direction. . . .

I thoroughly believe, too, in every designer of a building personally writing the specification for it. It is irksome, monotonous, wearisome work, deserving of no end of fragrant puffs of tobacco and the respect of one's fellows, I am sure, but it is the proper thing to do. You who have designed the building must know better than anyone else what materials and what workmanship are necessary in order to produce the desired effect and in order that it may serve its purpose. No one else can see into your heart and brain. A little curve left out here and a little bareness or meanness in the dimensions of the timbers there may make all the difference, and quite alter, and indeed spoil, the character of your cherished work, which you have dreamed about for months, and have, with your mind's eye, gazed upon with fond hope and anticipation ever since you first conceived the scheme.

Suppose your client to be one who will not spend a penny beyond the amount of the contract, and as your building grows you find day after day that your deputy specification writer has either omitted certain details altogether—never having thought of them as of any consequence, if indeed he had ever known you wished for them—or has so under-sized them and so meanly dealt with them that they will in no way fulfil your intentions. What can you do? You rage inwardly, but you must put up with it.

Or, again, suppose your deputy writer omits a most important item of workmanship or material, quite small in itself, but one that applies to a vast number of parts. It is an omission easily passed over unnoticed, because so small. One sentence might almost have been sufficient to describe it, and its cost to carry out once is a matter of a few shillings. It has, however, to apply to some hundreds of parts, and is, as you find when the particular things to which it belongs are about to be carried out, absolutely necessary. Your client believes he is going to have the work done properly for a sum he has agreed upon. Then in the middle of it all you spring upon him this extra of perhaps a very large sum. He naturally blames you, and yet your deputy specification writer or your quantity surveyor has caused all the trouble. Of course, sometimes you cannot help deputing work, even of this important nature, to others; but my advice is, after long experience, always write your specifications yourself if you possibly can, no matter how much you dislike the occupation, and write them in a businesslike way, in careful order as regards clauses, in proper sensible terms so expressed that by no stupidity or cunning on the part of those who have to execute the work can they be misinterpreted or made to mean anything else but what you intended them to mean, and in proper division under various trades.

Extras and Dimensions.

The young architect will find it difficult at first to deal fairly and tactfully with the somewhat intricate work of the measurement, valuation, and adjustment of extras and omissions. I would advise him to settle all the really small items—those too small to measure—with the builder on the spot, agreeing with him upon a definite sum for each separate small matter, and writing it down in his book as he goes about over the building with the contractor, on completion of the work, showing him the entry; and, if the latter happens to be of a shifty disposition, getting him to initial it. This saves a lot of time. If the contractor suggests a sum for a certain small item which, from your knowledge of what has been done, you consider less than the work is fairly worth, do not pass it over, but say you think it worth more, and increase it to the amount you feel it is worth. The builder sees by this that you are considering his interests as well as

those of the employer, and when you come to perhaps a much larger item which you feel he is over-charging, and which you have to reduce, he is much more ready to agree to the reduction. The contract may be one for many complicated alterations in a rambling country house, and both he and you become very tired of standing about. The business is a very trying one for his temper and yours, and the occasion is one calling for a great exercise of patience and tact. . . .

Whenever one is looking into these questions of extras one should, of course, carry the specification about with one and constantly refer to it. Many things for which a builder asks extra payment will be found, on looking into the document, to be quite clearly covered by the clauses contained in it, and the claim will at once fall to the ground. Wherever, while a building is in progress, there is extra work being done which will afterwards be buried out of sight, such as in foundations, for instance, however pressed for time you may be, measure it at once before you leave the work, and put it all down clearly in your book in the presence of the builder or the foreman in charge. This is a rule which should never be broken.

Visits of Inspection.

In speaking of these matters I am supposing that there is no clerk of works, and that the architect has to rely entirely upon himself. When under these circumstances he pays his periodical visits of inspection he must, of course, be more than ever careful to probe into the executed work. It is well always to select parts where the men, and perhaps the builder also, least expect you to peer into what is no longer visible on the surface. Naturally they do not like your even suggesting that you are going to do it, but, of course, you must be firm. If a man makes a great deal of fuss over it my suspicions are aroused at once. . . . Sometimes I have found that the workmen desire to do the work well, but are hampered by the builder. . . .

Clients.

There are a few points with regard to dealing with clients that I think I may venture to bring before you. I have found from experience that it is always wise to consider their particular characteristics, and to try to see things from their point of view as well as from one's own. No two persons are exactly alike. Try to know each one, and don't let your judgment and your temper be upset by what is probably, after all, only their usual, though peculiar, way of looking at and speaking or writing of things. For instance, one man will write a letter that makes one burn under a sense of injustice when one receives it, and yet he probably had no intention of producing such a strong effect as that. His embrocation is of the strength he has been accustomed to use on thick-skinned builders and horny-handed workmen, and for the moment he forgets that the application of it to your sensitive skin will stir every nerve and leave a raw place. Whenever you receive such a letter try to imagine the writer and his peculiar temperament, and think of him as perhaps just returned to his house tired with a long day's work or a long journey, bothered by several little worries which have nothing to do with his business with you, upset by his wife possibly, or by talking over and magnifying in his own mind the annoyance concerning which he is bound to write to you at once or miss the post; and then put the letter aside and think it over calmly. When you are yourself feeling quite comfortable physically, and the sting of the embrocation has passed away, take a scrap of paper and a pencil and draft a reply. Put it in your pocket, and later on draw it out and read it over again. You will still see in it, even after that, expressions that may well be softened; little words that you know will touch him up and make him feel he has been unjust to you in writing as he did, but which on second thoughts you feel you can well afford to alter. Until you have got rid of all the smart of the embrocation, believe me, you are not in a fit state to write. You cannot be. Your cool judgment is upset. You will afterwards regret it if you do. Think to yourself that he is in all probability already regretting that he wrote to you as he did. Remember also that a written sarcasm or a written bitter word, or even a written strong word, does not pass away or become softened by time as spoken words do, but it remains at hand, to be read again and again. You cannot get it back You cannot unwrite it. Again, we should do well to remember that unless we write what we have to write in such a way that it cannot be read by the recipient so as to mean anything but what we intend it to mean there is always the danger of that peculiarity of temperament in the recipient asserting itself, and causing the true meaning, your meaning, to develop into something quite different in his less practical and more excitable brain. And, again, if you do have a few days' satisfaction in thinking that you have made another man who has treated you most unfairly and unjustly, in a moment of irritation, ashamed of himself, you are paying a very high price for it if you lose thereby a client who might have been the source of six or twelve months' profitable work for you. Of course, occasionally you might be better off without certain men as clients, and without their work, but there are very few instances so flagrant, I think, as to make it your honourable duty to cut off your relationship with them, and even then the feeling of personal injury and insult should be carefully subordinated to the feeling of dishonour to the profession and your fellow architects as a body.

Nothing is so disappointing to a client as the discovery that he will have to pay a thousand pounds for what his young architect has told him he can probably get for seven hundred. Yet young architects, and many elderly ones, too, I fear, are constantly bringing about this disappointment. It is not always their fault, but in most cases it is. . . .

Having secured your client, and we will assume it has been done, as it ought always to be, with his eyes wide open, take care not to lose him. Be entirely open with him. Just as there ought to be no "secrets apart" between solicitor and client, so ought there to be none between architect and client. Humour him. Get him to confide in you, showing him always that you are worthy of his confidence. He will come to understand that your work is carefully done, and is fully worth what you will get for doing it. Sometimes it will happen that he is not fond of spending money, and feels justified in hoarding it because he has seen such bad use made of it. . . .

Mistakes and Errors.

And now at the end I want just to say a word on the subject of mistakes and errors. Who does not occasionally make a mistake? Who of us does not now and then forget something which should have been remembered? Well, if it so happens that we have done so, let us not try to throw the blame upon another. Let us own up at once that the fault is ours. Believe me, a client or an employer will, so far from thinking less well of you on account of the error you have made, think far more highly of you for telling him straight about the matter. He will think to himself, "This is a man I can trust. He is honest with himself and with me. He knows how it came about, he feels keenly the position, and will not forget it, and so will be unlikely to make that mistake again. Another is much more likely to make it than he is. I will continue to believe in him." Let us remember, too, that a great man has said words like these, "He who never makes a mistake rarely makes anything."

In conclusion, let us do our best in small things just as carefully as in great things. The opportunities of dealing with the great things depend upon the careful treatment of the small things. And let us bear in mind always this great fact:—when this short life is over the thing that will really matter, so far as we ourselves are concerned, is not what we have succeeded in accomplishing, but what we have tried to accomplish."

The President thanked Mr. Awdry for his lecture. Mr. Mowbray Green, F.R.I.B.A (Bath) proposed, and Mr. C. F. W. Dening, Lic.R.I.B.A., seconded, a very hearty vote of thanks. This was supported by Messrs. Maynard Froud, Lic.R.I.B.A., and J. Foster Wood. F.R.I.B.A.

SCHOOLS AT CAERPHILLY.

The new higher elementary schools at Caerphilly were opened last week by Lord Pontypridd. The buildings have been erected from the designs of the County Architect, Mr. D. Pugh Jones.

THE MUNICIPAL ENGINEER.

At a recent meeting of the Institution of Municipal Engineers Mr. F. Latham, M.Inst.C.E.I., in the course of his Presidential address, referred to the status of the municipal engineer. "The municipal engineer of to-day," he said, "is the expert of less than a quarter of a century ago. Works which would have necessitated the knowledge and experience of the specialist a quarter of a century ago are undertaken by the municipal engineer of to-day as a duty. Municipal authorities expect the best and most up-to-date advice from their engineering officers on all subjects, whether it be sewerage, water supply, sea defence, public buildings, or building and sanitary law. The experience required by the municipal engineer is extremely wide, and he has an everyday routine in which that knowledge has to be speedily directed from one subject to another by an active, level-headed mind. . . .

We have only to look back in history as far as the introduction of the turnpike system in England to realise the enormous advance in modern engineering. At that time the roads throughout England were so bad that in the North, in the year 1770, ruts 4 ft. deep were measured in their surface. The Newcastle road appears to have been in even a more disreputable condition; it was stated "a more dreadful road cannot be imagined." When it is remembered that everything that was transported on land in those days had to be sent by road in the absence of railways and canals it will be realised what a state existed.

In 1763 it took a fortnight to travel from London to Edinburgh. No wonder that it has been said: "Twenty miles of slough and an unbridged river between two parishes were greater impediments to intercourse than the Atlantic Ocean now is between England and America." The men who came forward one after another to make roads, bridges, canals, railroads, steamships, telegraphs were all engineers of natural ability, with love for their calling in life.

These men were the founders in modern days of that particular constructive and mechanical science of civil engineering which has advanced with such leaps and bounds as to have a universal application. By its cultivation and development such progress in wealth and civilisation and healthy conditions has been made throughout the world as without this would have been absolutely impossible.

These modern engineering instincts, however, did not spring up like Autochthones—from nothing of like character. On the contrary, we have evidence of the cultivation of similar arts and sciences from time immemorial. That the ancients were well skilled in engineering matters is evident, and the Romans have likewise left sufficient evidence of their inventive abilities to prove the advance which that nation made in engineering. England was devoid of the engineer's services throughout the Dark Ages which followed the downfall of the Roman Empire, and even the great Roman roads of this country, and, in fact, throughout the whole world, were allowed to go to ruin. The world, however, was not devoid of engineering skill. At the breaking up of the Roman Empire the Roman Colleges of Artificers and Guilds of Builders and Masons became spread over Europe, and developed a mixed character of the practical and the religious. These instincts were in turn retained and imitated by the mediæval architects. Thus by the Normans and within the monasteries during those ages were retained the secrets of the science and arts of the Roman Guilds of Builders and Masons, but these were chiefly utilised in the building of religious edifices, strongholds, and castles. These were, indeed, the works of constructive architects and masons of first-class order, which fact must have preserved for us the basis of an inventive mind, to be matured and developed by science as we now see it in the profession of the engineer. It will be evident that those guilds of constructive architects who could erect such magnificent buildings as cathedrals, castles, and strongholds in this and other countries must have possessed engineering instincts.

The civil engineer of to-day, however, does not profess to be an architect, but the municipal engineer cannot afford to neglect this very

important and artistic side of his profession. A substantial knowledge of architecture is essential to his success, as buildings of various descriptions have to be designed and constructed under his supervision. He is called upon to advise his council on the laying out of estates and the examination of building plans, while he has the planning of many schemes which must necessarily call for artistic treatment at his hands. A municipal engineer engaged at any seaside resort would be quite unsuited to hold his position without a knowledge of architecture, by which he could design and carry out the works expected of him.

The interests of the municipal engineer require watching in this respect, for their profession is so intimately associated with architecture, as well as with civil engineering, that no legal rights of status or protection should be granted to either one profession or the other without the rights of the municipal engineer being recognised on both sides.

The present-day engineer's attention is so much engrossed by the scientific and mechanical sides of his profession that the very sentiment of the artistic is abandoned and neglected, and its place among the liberal arts is long since forfeited. The municipal engineer, however, must not be persuaded that he is essentially a civil engineer; his training must be broad and varied, and, while a knowledge of the mechanical sciences is necessary, he must cultivate the artistic side. Architects to-day are mastering so many matters of extreme importance to municipal engineers, especially since the advent of reinforced concrete construction, that the municipal officer may be more fitted in many respects if drawn from the architectural profession than from that of pure civil engineering.

To be a competent engineer to a municipality a man must be cultivated in every direction—civil and mechanical engineering and architecture. He must be acquainted with the classical side of engineering. Water and sanitary engineering call for a keen interest in geology. Sea-coast engineering demands a study of the phenomena of the sea. In fact, most subjects, if studied deeply, have a most interesting classical side. But, apart from all the refinements of the mind, the official must be a business man and a gentleman of tact and thoughtful consideration. . . .

An engineer is a man who should invent and devise. He should strive to invent and to ascertain something original and worthy of his exertions. It is an axiom that inventive power is indispensable to success, so far as every branch of engineering is concerned. . . .

I cannot too strongly emphasise the fact that every engineer has a moral obligation to perform in maintaining the status of his profession. This obligation is sometimes more honoured in the breach than in the observance in trading on the previleges of taking premium pupils. In the first place, no pupil should be admitted without showing proof of a sound education. When a vacancy occurs for a pupil the applicants might be called upon to sit for competitive examination, or, in the case of only one applicant, he should show sufficient proof of education. . . ."

LAW REPORTS.

KING'S BENCH DIVISION.

Architect Sued for Libel.

ON Tuesday, before Mr. Justice Pickford and a jury, an action for libel was brought by Mr. Albert Edward Addis, building surveyor, of Old Queen-street, Westminster, against Mr. Horace Farquharson, architect, of North Audley-street, who acted for Lord Decies in the renovation of Sefton Park, near Slough. The alleged libel was contained in a letter written by the defendant to Mr. F. H. Anderson, of York, solicitor to Lord Decies.

The defence was a denial that the statements had a defamatory meaning, and it was urged they were written upon a privileged occasion and without malice.

Mr. Lewis Thomas, K.C., and Mr. H. D. Samuel appeared for plaintiff; and Mr. Clavell Salter, K.C., M.P., and Mr. H. Brandon for defendant.

Mr. Lewis Thomas, K.C., in opening the plaintiff's case, said that in 1910 Lord Decies, previous to his marriage, was desirous of having certain alterations executed at Sefton Park, his seat near Slough, and employed Mr. Farquharson, the defendant, as his architect. Instead of a definite contract being drawn up between Lord Decies and the builders, Messrs. Holland, Hannen, & Cubitts, Ltd., a contract which was known as payment upon schedule prices was entered into. Lord Decies, on going abroad, left his power of attorney to his solicitor, Mr. F. H. Anderson, of York, and provision was made that the builders were to be paid during the progress of the work by instalments on account as certified by Mr. Farquharson. The work was finished in July or August, 1911.

When the matter of the final instalment to be paid was brought to the notice of Lord Decies he was astonished to find that, instead of the work having cost him eight to ten thousand pounds, the amount of liability incurred on his behalf amounted to within a few pounds of 20,000*l.* Thereupon Mr. Anderson was consulted, and an investigation took place. Mr. Anderson applied to the firm of Messrs. Waring & Gillow for the recommendation of the name of someone competent to estimate the work which had been done. He then came in touch with the plaintiff in the present action, and in January of this year the plaintiff proceeded to make a cursory examination. By quite a superficial examination he came to the conclusion there were many mistakes in the charges that had been passed against Lord Decies by the quantity surveyor whom Mr. Farquharson retained.

During the progress of the work some 13,000*l.* had been paid, and Mr. Anderson warned Mr. Farquharson he was not to give a certificate for the 6,000*l.* odd, also said to be due, until the matter had been investigated, and told him further that Mr. Addis, the plaintiff, had hardly begun when he discovered discrepancies in the measurements and charges. Mr. Farquharson became angry, and asked in an excited tone: "Who is your surveyor?" The plaintiff was present, and Mr. Anderson replied: "This gentleman here." The defendant stepped up to him and asked: "Who are you, sir? Give me your card." Later, continued Counsel, an interview was arranged, at the suggestion of Mr. Anderson, between the plaintiff and Mr. Morle, the quantity surveyor, in order that Mr. Morle might point out anything he liked to the plaintiff. On March 6 these gentlemen met at Sefton Park, and Mr. Morle requested the plaintiff to give him a list of what he had discovered. Plaintiff did not give him a list, but mentioned certain matters, of which, apparently, notes were made. Two items in particular of overcharges were pointed out.

On March 27 the defendant wrote the letter to Mr. Anderson in which the statements complained of occurred. It contained the following:—

> "I enclose list of the points raised by Mr. Addis, with my surveyor's notes opposite to them. . . In regard to all the other items, Mr. Addis's queries are due either to ignorance or to misconception. . . . I think it most unfortunate that you should have called in a man who, having been in Messrs. Cubitts' employ, left the firm not of his own wish, and I can only suppose that this was inadvertence on your part. It would have been better if you had gone to a firm of surveyors of recognised qualifications and position. Yours faithfully,
>
> HORACE FARQUHARSON."

Having received this letter, continued Counsel, Mr. Anderson wrote to the defendant, asking what he meant, and the defendant endeavoured to get some justification for the charges he had made. He wrote to Messrs. Cubitts, in whose employ the plaintiff had been several years before, and then replied to Mr. Anderson:—

> "Your Mr. Addis," he said, "was in Messrs. Cubitts' employ as foreman from 1897 to 1900, when he was given no further jobs, as the firm found him unsuitable. There was nothing whatever against his character, I gather. . . . Under these circumstances there is just the chance the man may feel sore on the matter."

The plaintiff, said Counsel, in fact, was not a foreman, but was manager of the West-end department of Messrs. Cubitts' firm, Messrs. Cubitts not then being a company. He left through a breakdown in health, and was not dismissed. He had been for a great many years in the building trade, and his father was the manager to the well-known firm of Messrs. Miles & Sons.

Plaintiff then went into the box, and, in the course of his evidence, said that some of the measurements were not made on the job. He thought they had been done at the office.

Mr. Clavell Salter, K.C. (cross-examining): Do you mean that would be fraud?

Plaintiff: No; if the measurements are taken from the plans, it can be done just as well.

What else did you find?—Blocking out had been charged for twice over.

Mr. Francis Henry Anderson, Lord Decies' solicitor, gave evidence, and mentioned there was a further action pending, in which Lord Decies was claiming in respect of overcharges.

Mr. Salter: Did Lord and Lady Decies, on their arrival from America, order further decorative work?—I understand they did order certain work.

Did Mr. Farquharson say he would hold his hand and not certify the remaining amount if Mr. Addis would give particulars of what he complained?—I did not hear him say that.

Did you hand over the letter because you were angry?—Oh, no!

Mr. George Stevenson, a surveyor, said he had seen the work at Sefton Park, and he thought the plaintiff's queries had been very proper and necessary before he could measure.

Counsel: Are you a member of the Surveyors' Institution?—No.

Does the absence of that mean any lack of qualification?—No; experience is what we require.

At the conclusion of plaintiff's case, Mr. Clavell Salter asked the Judge to rule the occasion of the letter a privileged one.

His Lordship: I shall take the opinion of the jury, because I think there is clearly evidence to go upon.

Addressing the jury for the defence, Mr. Salter said they would have to decide whether the statements made in the letter were true in substance and in fact, and whether, when he wrote the letter, Mr. Farquharson wrote it in good faith, believing the truth of what he said, and not being actuated by ill-will or improper motive.

In writing it, Counsel submitted, he did no more than was right, having regard to the interests of Lord Decies and his own position. Mr. Farquharson was a gentleman of good standing in his profession, and was employed by Lord Decies before his marriage, and, no doubt, in contemplation of it, his Lordship took him round and gave him instructions for very extensive alterations to his mansion. Mr. Farquharson showed the rough plan to Mr. Hannen, of Messrs. Holland, Hannen, & Cubitts, Ltd., and upon that reported to Lord Decies that the work would cost somewhere in the neighbourhood of 8,000*l.* to 10,000*l.*

Lord Decies went away to America, and when he and Lady Decies returned they gave orders for a large amount of additional work, which took the form of internal decoration. It was done in an expensive way, and it was done upon a schedule of prices and measurements. Throughout Mr. Farquharson was the architect, and it was his duty to look after the interests of Lord Decies. As regards his certificates, he was also placed in a special position of almost judicial character, in which he had to see that the balance was held fairly between all parties. Messrs. Evill & Morle were the quantity surveyors, and upon their measurements and their prices payment was to be made to the builders.

The work went forward, and when it was done Lord and Lady Decies expressed the utmost satisfaction at the result. The next thing was to measure up that 20,000*l.* of work. To say the estimate was 10,000*l.* and the ultimate price 20,000*l.* was obscuring the matter; 20,000*l.*, in fact, included the beautiful and costly work ordered by the married couple upon their return. The measurements were made and agreed on both sides, but apparently Lord and Lady Decies were surprised when the amount came to 20,000*l.* Mr. Anderson then employed the plaintiff, and Mr. Farquharson raised no objection to his seeing whether he had done his work properly. But Messrs. Holland, Hannen, & Cubitts had done the work, and they were entitled to be paid under the terms of the contract and upon the defendant's certificate. That was December, and Mr. Farquharson had given no interim certificate since August 2, and the builders had become entitled to the balance of 6,000*l.* odd.

Mr. Anderson seemed to have thought he had a right to require Mr. Farquharson to withhold his certificate; but that was quite wrong. On January 25 the defendant said he would withhold his certificate still further, but that the builders were entitled to know what the objections were. It was arranged that Mr. Addis should deliver the full and proper list of the objections he was going to make, but no such list was ever given. The plaintiff was present at the interview when this decision was come to, and Mr. Farquharson did not adopt towards him any hostile or overbearing tone, but simply asked for the list of objections.

Mr. Hannen informed the defendant that Mr. Addis had been in their employ, but he was not very competent, and they waited for an opportunity of terminating the employment without hurting the employee. This opportunity came when he fell ill, and certainly there was no resignation. Time went on, and no particulars had been received from the plaintiff. Then there came the meeting at Sefton Park between plaintiff and Mr. Morle. Plaintiff took Mr. Morle to nineteen places where there were matters he objected to, and the next day Mr. Morle reported to Mr. Farquharson. They went through the lists point by point, and in two cases obvious mistakes had been made, which were at once corrected. With regard to the rest, Mr. Farquharson could only say those objections struck him as frivolous and unfounded, and as showing on the part of Mr. Addis unfamiliarity with the details of the surveyor's profession.

Mr. Farquharson, as he had withheld the certificate, found himself in a position of great difficulty, until at last he felt he could no longer withhold it, and he felt also that Lord Decies might be placed in a position which would involve much litigation. With regard to the objections made by the plaintiff, he said those other seventeen queries of plaintiff's were, in his judgment, the result either of ignorance or misconception, and if that was his honest opinion it was his duty to express it. It was also an unreasonable attack upon the builders by a gentleman who had been in their employ.

Defendant, giving evidence, said he personally inspected the work all through. The total cost came to 19,900*l*., according to Messrs. Evill & Morle's quantities, and the balance at the end of December was 6,800*l*.

Evidence was also given by Mr. Benjamin Hannen, Mr. Morle (the quantity surveyor under the contract), and Mr. T. E. Bare, of Messrs. Bare, Leaning, & Bare, quantity surveyors. The last named expressed the view the plaintiff had raised points which were not necessary in the matter, and that he had not had the requisite experience as a quantity surveyor.

The jury found the statements in the letter defamatory, and that they were not true. They assessed damages at 50*l*. His Lordship entered judgment accordingly.

KING'S BENCH DIVISION.

(Before Mr. Justice BANKES and a Common Jury.)

Builder's Slander Action.

ON Thursday, last week, an action was heard in which Mr. Alfred George Cook, builder, of Keat's-grove, Hampstead, claimed damages from the defendant, Mr. George Gradon, of Hill View, Parliament-hill, Hampstead, for slander alleged to have been uttered concerning work carried out at defendant's house. Plaintiff further claimed 90*l*. balance for work done and materials supplied. The slander was denied.

Mr. Marshall Hall, K.C., and Mr. Scarlett appeared for the plaintiff; and Mr. Ralph Bankes, K.C., and Dr. Hibbert were for the defendant.

Mr. Marshall Hall, in opening the plaintiff's case, said the house in question was a somewhat old one, and near it in the garden was a wooden shed, which was used as a billiard-room for a small-sized table.

The defendant, who was a chartered accountant in the City, apparently wanted the shed enlarged, and about September 14 or 15, 1911, he handed to the plaintiff a sketch plan showing what he desired to be done, and giving the positions of the wooden shed and also of another building, which was used as a laundry. The plaintiff went into the matter, and on September 23 sent in an estimate for building a new billiard-room for the sum of 48*l*. 7s. This estimate was accepted, and the work was proceeded with. The moment they began Mr. Gradon thought he would have a bigger building, and eventually a bigger one was decided upon. The plaintiff considered that the old estimate had been done away with, and the work, in fact, could not possibly be done at the old price. It was a question whether an existing boundary wall could be used, but as the local authority would not allow it the plaintiff accordingly had to build a new wall.

Running underneath the building was an old drain, which Mr. Cook pointed out would have to be tested.

In the course of operations he received a letter from Dr. McCleary, the Medical Officer of Health for Hampstead, and then saw Mr. Kershaw, the principal sanitary inspector. The defendant told plaintiff he had better test the drain, and the test was carried out with water, and defects were found. A report was made to the defendant, who said: "I cannot help it. You must do your best for me." The existing pipes were earthenware, and Mr. Gradon agreed the best thing would be to relay the drain with iron pipes, and that the plaintiff should do the work.

In reply to a letter from the defendant the Medical Officer of Health wrote:—

> "I think you have been misinformed. The drains were tested and found to be leaking. . . . It may be possible to remedy the defects without relaying. If, however, it should be necessary to relay, I should recommend you to have iron pipes."

The drains, continued Counsel, were actually seen in their defective condition by Mr. Gradon himself. During the month of December the work was in progress, and no complaint appeared to be made against the plaintiff.

In course of time the billiard-room was finished, and there was no complaint about it except in regard to the price.

Several letters passed, and on January 1, 1912, the defendant wrote to the plaintiff:—

> "It surely cannot surprise you that I am concerned about the heavy expense. You will also remember that Dr. McCleary said he did not require the drains to be laid anew in iron pipes, but only required the leakage found. It has all along occurred to me that by taking the drains in sections the leakage might have been located. Instead the whole has been taken up with serious loss to me."

The plaintiff sent in his account for the billiard-room, and defendant, in reply, complained that the plaintiff had given a tender and then departed from it in his charges. There was no suggestion, said Mr. Marshall Hall, that any of the work was fraudulent, but only that there was an overcharge.

Defendant wrote again:—

> "I returned this morning to find another part of the garden had been taken up. I hereby give you warning that as I have not authorised this work, I am not prepared to pay for it."

In the first week in February the workmen left the job, and Dr. McCleary sent a complaint that the work had been left in an unfinished condition. Mr. Gradon then wrote:—

> "No one is more tired or annoyed over Mr. Cook's work than I am. I have spoken to, written to, and threatened the builder until I am tired. The only thing I could do was to call him off the job."

On February 5, said Counsel, the defendant went to see Dr. McCleary, and then uttered the words complained of in the case. In discussing the matter of the drains with him defendant said: "He (Cook) fraudulently made the job. There was no necessity for it."

Then in a letter to the plaintiff the defendant said:—

> "I find what I all along suspected, that this work was not demanded by the local authority. . . You determined to open up the whole drainage system and relay it contrary to my instructions. I have not the slightest doubt now in my own mind that from the first you intended to manufacture this job. Before you had opened up one particle of ground you had delivered in my garden eight or ten long iron pipes, when, even if there were a leakage, one or two pipes would have been sufficient. I have every ground for doubt whether there was a leakage at all."

Counsel added that there was a balance of about 90*l*. due to Mr. Cook upon the building transactions.

Plaintiff gave evidence in support of this statement, and said the Hampstead sanitary inspector, Mr. Kershaw, told him he must get the drains tested to see if they were watertight. Witness found they were open at the collar, and he thought iron pipes were necessary on account of the nature of the soil.

Mr. Bankes, K.C. (cross-examining): Did you break up every drain-pipe with a sledge-hammer, so that no one could see whether they were defective or not?—Witness said the pipes were broken in the trench, as they were cemented in.

Did your man tell you some of the pipes were sound, and did you say they were to be broken up all the same?—Nothing of the kind.

Mr. Gradon ultimately told you not to go on with the work. Why did you go on in defiance of his orders?—It had to be finished by somebody. For one thing, I should like to complete my own work.

Isn't that making a job?—I don't think so.

Dr. McCleary, who was in February Medical Officer of Health at Hampstead, spoke to the occasion when the slander was said to have been uttered. Defendant, he said, said something to the effect that plaintiff had done work he had not been authorised to do.

Mr. Bankes: Could the leaks be filled by pouring in liquid cement?—It might have been tried.

At the conclusion of the evidence for the plaintiff Mr. Bankes submitted that on the question of slander there was no case to go to the jury. There was, he said, no sort of evidence to go upon.

The Judge said he thought he must rule so.

Mr. Marshall Hall asked leave to amend and substitute libel alleged to be contained in a letter from the defendant.

His Lordship, however, said he could not allow that course.

For the defence, Mr. Bankes said the plaintiff had no authority from the Borough Council, and, moreover, had none from the defendant. When he continued doing the drainage work it was in absolute defiance of defendant, who ordered him to stop. Mr. Cook's attitude was that he did go on because somebody would have to do it. The drainage system, as it had existed, had given no cause for complaint of any kind, either of leakage, smell, or danger to health. The defendant was never shown a leakage from beginning to end, and the policy adopted was to open the drains, smash them up, put in iron ones, and make Mr. Gradon pay. The latter had said they were to be put right if leaking. If on the strength of that, added Counsel, the builder is able to break up the whole of the drains, we have arrived at a point beyond which it is impossible to go.

Mr. Gradon, the defendant, said he was told all along by plaintiff it was the sanitary authority which was compelling the work. With regard to the billiard-room, witness never authorised a bigger building.

Other witnesses were also called.

His Lordship, having decided there was nothing to go to the jury upon the slander issue, left a number of questions upon the rest of the case.

The jury's findings were:—

1. That the defendant gave the order to plaintiff's employee, King, to be repeated to the plaintiff, that the billiard-room was to be made larger;

2. That defendant knew the building as erected was more expensive than that for which plaintiff estimated;

3. That the relaying of the drains was necessary;

4. That plaintiff did represent to the defendant that the district authority had required him to relay the drains, but that defendant did not act upon that representation in allowing the plaintiff to relay the drains.

The Judge: That is judgment for the plaintiff. There is the question of the amount, and I advise the parties to settle it between them.

Dr. Hibbert, for the defendant, asked for the costs on the slander issue.

The Judge: I won't enter judgment now, but the case can be mentioned again on Wednesday.

On Wednesday the case again came before the Judge, and it was announced that the parties had not been able to agree as to the amount.

After hearing Counsel, his Lordship said he would enter judgment for the plaintiff for 67*l*. 19s. 7d., and costs upon the claim for work done, and on the counterclaim judgment for defendant for 15*l*. 11s. 3d., with costs. Defendant was granted costs upon the issue of slander.

Solicitors:—Mr. E. L. Greaves, Fleet-street, for the plaintiff; Mr. J. Tucker, Bedford-row, for the defendant.

District Surveyors' Fees.

AT Lambeth Police Court on the 9th inst., before Mr. Hopkins, Messrs. Spiers & Son, Ltd., builders, of Hill-road, St. John's Wood, were summoned by Mr. Bernard Dicksee, District Surveyor, for the recovery of 18*l*. 19s. 9d., fees alleged to be due to him in respect of a building at New Kent-road. This was a friendly dispute brought before the Court in order to obtain a decision as to the fees payable to District Surveyors in respect of skeleton-frame buildings. Before the London County Council (General Powers) Act of 1909 all the London Building Acts were based on the assumption that the buildings would be of brick construction. In order to meet the case of steel-frame buildings the Act of 1909 was passed. Sect. 26 of that Act provides that the amount of the fee payable to District Surveyors in respect of such buildings shall be equal to two and a half times the amount of the fee specified in regard to new buildings in Part I. of the third schedule of the Act of 1894.

The contention of Mr. Pasmore, on behalf of the District Surveyor, was that that fee was in addition to and not in substitution of the fee specified in the Act of 1894. The

account of Mr. Dicksee was put in. It included an item of 4*l.* 2s. 6d., the fee chargeable under the old Act, in addition to the fee of 10*l.* 6s. 3d. payable under the 1909 Act, and it was to the former item that the defendants took exception.

Mr. Dicksee, in giving evidence, said the amount of extra work entailed by steel-frame buildings was perfectly enormous.

On behalf of the defendants, Mr. Price argued that the natural interpretation of sect. 26 of the Act of 1909 was that the fee therein stated was in substitution for the fee provided by the Act of 1894.

Mr. Hopkins took that view, and gave judgment for the District Surveyor for the amount claimed, less the 4*l.* 2s. 6d. in dispute.—*The Times.*

OFFICIAL REFEREE'S COURT.
(Before Mr. EDWARD POLLOCK.)

The Defence to a Contractors' Claim: Pethick Brothers *v.* Metropolitan Water Board.

MR. EDWARD POLLOCK, who last week deferred his decision in the claim by Messrs. Pethick Brothers, contractors, of Plymouth, against the Metropolitan Water Board (a summary of the hearing of which has appeared in the *Builder*), summoned the legal advisers of the parties to the Court on December 11.

Mr. Pollock said he understood now that Mr. Holman Gregory, K.C. (for the Board), desired to rely on Clause 20 of the agreement as a defence to the claim. He thought that as the pleadings now stood the Board could not rely upon that clause, because it seemed to him that if that had been put forward by the Board the advisers of the contractors (the plaintiffs) might have taken a different course. Therefore, if the Board desired to raise the point concerning Clause 20, he thought it would be necessary to amend the pleadings. Whether the Board desired to do so was another question.

Mr. Holman Gregory, K.C. (for the defendant Board), said that if it came to a question of costs, he was not prepared to ask for an amendment. His submission, however, was that, though the draughtsmen of the pleadings did refer to Clause 34, it did not preclude him (Counsel) from referring the Referee to another part of the contract.

The Official Referee said that a new agreement would have had to be made under the seal of the Board. He added that, in his opinion, the contractors could not have set up that there was any fresh agreement, because there was nothing in any way which would bind the Board. Therefore the Board could not set up any fresh agreement to bind the contractors.

Mr. Hudson, K.C. (for the plaintiffs): In regard to Clause 20, you have, sir, offered my friend to amend, and he does not propose to amend. If you look at the pleadings you will find that the Board's counterclaim is founded on Clause 34 of the agreement. Now, defendants, Counsel added, wished to raise this point of law.

Mr. Gregory said he had only introduced the matter when Mr. Hudson himself raised the point.

Mr. Pollock: I shall deal with the case as it stands, then.

Both Counsel: We are much obliged to you.

LONDON COUNCILS.

Acton.—Plans have been passed for Messrs. Evershed & Vignolles for the extensions to their factory in Cunnington-street, Acton Green; also for Mr. G. A. Gale for the erection of twenty-three houses in Dordrecht-road. The Surveyor has been instructed to prepare plans for the erection of a convenience at the Mount at an estimated cost of 700*l.*

Barnet.—The Surveyor has been instructed to report as to the cost of paving the footway in Fitzjohn-avenue.

Battersea.—Electricity mains are to be extended in various parts of the district at an estimated cost of 322*l.* The portion of the sewer in Sheepcote-lane, between Culvert-road and Henley-street, is to be taken up and relaid with 9-in. pipes at an estimated cost of 443*l.* Plans have been lodged with the London County Council by Mr. H. C. Hassell for alterations to the London and South-Western Bank, 356, Battersea Park-road.

East Ham.—Plans by the Borough Engineer have been approved for making up a portion of Haldane-road at an estimated cost of 1,428*l.*; also a portion of Chesley-gardens and Geoffrey-gardens at a total estimated cost of 156*l.* Plans have been passed for Mr. J. Gordon for the erection of twenty-three houses in Gresham-road.

Greenwich.—The roadway of the new street connecting Wellington-street with Creek-road, and also a portion of the roadway of Wellington-street, is to be paved with random sett paving, and the footways made up, at a total estimated cost of 250*l.* The tender of Messrs. J. Mowlem & Co., Ltd., Grosvenor Wharf, Westminster, S.W., has been accepted at 855*l.* for forming and paving Vanbrugh-fields as a new street. Plans have been passed for Mr. S. A. Yeo for the erection of "Earl Grey" public-house, Straightsmouth, and for Mr. A. Shore, for seven houses, Highmore-road.

Hackney.—New street works are to be carried out in portions of Ashstead and Lingwood roads. The sewer in Pendar-road is to be reconstructed for a length of 400 ft., or thereabouts, with 9-in. glazed stoneware pipes, at an estimated total cost of 91*l.* The tender of the Strand Building Company, 200, Strand, W.C., has been accepted, at 1,151*l.*, for the construction of an underground convenience in Kingsland-road. Other tenders were received from Messrs. W. Silk & Son, 13, High-street, Homerton, N.E., 1,611*l.* 10s.; Messrs. Brand, Pettitt, & Co., 247, West Green-road, Tottenham, N., 1,590*l.*; Messrs. Barrett & Power, St. Thomas' Works, Lyme-grove, Hackney, N.E., 1,469*l.*; Messrs. J. E. Whiter & Co., 89, Newington Butts, S.E., 1,377*l.*; Messrs. William Shurmur & Sons, Ltd., Riverside Works, Upper Clapton, N.E., 1,368*l.*; Mr. Herbert Mann, 13, High-street, Collier's Wood, Merton, S.W., 1,285*l.* The sixteen stanchions on which the coal bunkers at the Council's Electricity Works rest are to be stiffened and lengthened at an estimated cost of 1,400*l.*, and the work is to be carried out by Messrs. W. J. Jenkin & Co., Ltd. The following plans have been passed:—Mr. D. S. Barclay, forty houses, Leadale-road, and twelve houses, Lingwood-road; Messrs. Moon & Ballinger, nine shops and flats, Lea Bridge-road; Mr. A. Dixon, on behalf of Messrs. Whitbread & Co., Ltd., alterations to "The Havelock" public-house, Albion-road, London Fields; Mr. C. R. Price, additions to factory, Culford-mews, Balls Pond-road; Messrs. Goodall & Son, rebuilding 78, Kingsland High-street; Messrs. J. Garey & Sons, cinematograph hall, Brooksby's-walk. The tender of Mr. F. J. Gorham, Point-hill, Greenwich, S.E., has been accepted, at 3,995*l.*, for the erection of a library in Northwold-road, Clapton. Other tenders were received from:—Messrs. F. & G. Foster, Camden Works, Norwood Junction, 4,121*l.*; Messrs. J. E. Whiter & Co., 89, Newington-butts, S.E., 4,224*l.*; Messrs. A. & S. Wheater, 193, High-street, Stoke Newington, 4,278*l.* 12s.; Messrs. W. Lawrence & Son, 21, Finsbury-circus, E.C., 4,394*l.*; Strand Building Company, 200, Strand, W.C., 4,454*l.* 10s.; Messrs. Davey & Armitage, Elmer-avenue, Southend-on-Sea, 4,485*l.*; Mr. F. J. Coxhead, Bulwer-road, Leytonstone, 4,496*l.*; Messrs. W. Shurmur & Sons, Riverside Works, Upper Clapton, 4,563*l.*; Messrs. H. & G. Taylor, Hayes-lane, Beckenham, 4,566*l.*; Messrs. F. Webster & Son, Grove Vale Works, East Dulwich, 4,589*l.*; Messrs. J. Smith & Sons, Ltd., 106, New Bond-street, W., 4,643*l.*; Messrs. Brand, Pettitt, & Co., 247, West Green-road, Tottenham, 4,652*l.*; Messrs. E. Lawrance & Sons, Ltd., 15 and 16, Wharf-road, City-road, N., 4,653*l.*; Messrs. C. Wall, Ltd., 4, Lloyds-avenue, E.C., 4,904*l.*; Messrs. Markham & Markham, 79, Essex-road, N., 4,933*l.*; Messrs. J. Waddington & Sons, Ltd., 6 and 7, Creed-lane, E.C., 5,095*l.* 5s.; Messrs. Allen & Co., Pimlico Wharf, Westminster, S.W., 5,250*l.*; Mr. S. E. Moss, Southend-on-Sea, 5,577*l.*

Hendon.—Application is to be made to the Middlesex County Council for a contribution towards the cost of paving the footway of Cheapside, between Golder's Green-crescent and Finchley-road. The Surveyor has been directed to submit plans and estimates of the cost of carrying out improvement works in Bell-lane. The Surveyor has submitted plans and estimates amounting to 4,470*l.* for making up Golder's-gardens, Gainsborough-gardens, Powis-gardens, Hampstead-gardens, Alyth-gardens, Forres-gardens, and Temple-gardens. The Highways Committee, before definitely deciding upon the execution of this work, have asked the Surveyor to prepare an alternative specification for making up the roads in a less expensive manner. A report is to be brought up by the Surveyor as to the making up of Armitage-road. Sanction has been received from the Local Government Board to borrow 5,798*l.* for private street improvements at Langney Park, Tennyson-road, Shakespeare-road, and Milton-road, Mill Hill; also 606*l.* for street improvements in Castle-street and Sunny Gardens-road. The tender of Messrs. J. E. Whiter & Co. has been provisionally accepted for the erection of the Central Fire Station. The contract price is 6,113*l.*

Heston and Isleworth.—Electricity mains are to be extended at an estimated cost of 250*l.* Sanction has been received from the Local Government Board to the borrowing of 8,258*l.* (1) for replacing the existing Jarrah wood-paving in High-street, Hounslow, by creosoted deal blocks, and (2) for laying "Durax" paving in the margins of the road outside the tramway tracks between Brentford Bridge and Isleworth Railway-station. Hounslow-avenue and Murray-avenue, Whitton, are to be made up at estimated costs of 1,029*l.* and 603*l.* respectively. Plans have been lodged by Messrs. J. Dorey & Co., Ltd., for additions to a factory in Brentford End, Isleworth.

Islington.—A portion of the sewer in Pembroke-street is to be demolished and replaced by one constructed of 9-in. stoneware pipes, imbedded in Portland cement concrete, and laid to an improved gradient at an estimated cost of 245*l.* Electricity mains are to be extended at an estimated cost of 170*l.*

Lambeth.—The General Purposes Committee have under consideration the question of the utilisation of ground at the rear of the Town Hall for the provision of public baths. Plans have been lodged with the London County Council by Messrs. E. W. & E. S. Caldwell for the erection of a building on the site of Nos. 124-26, Denmark-hill. Repairs are to be carried out to the wood-paved carriageway of Kennington Oval at an estimated cost of 100*l.*

Lewisham.—Plans and estimates have been approved for making up a portion of Perry-rise as a new street. For kerbing and channelling a further portion of this road the tender of Messrs. Fry Brothers has been accepted, at 840*l.*; as has also the tender of the Thames Stone Company, Ltd., for paving the footways with artificial stone, at 3s. 10d. per super. yard. The offer of the Stanford's House Property Investment Company, Ltd., to kerb and pave with artificial stone a portion of the footpath on the north side of George-lane, has been accepted. Artificial stone in lieu of tar-paving is to be laid in Brownhill-road and Stanstead-road at a total estimated cost of 163*l.* The tenders of Mr. W. Pearce have been accepted for kerbing, channelling, and making up the carriageway of Arran-road, at 2,355*l.*, and for paving the footways with artificial stone at 3s. 9d. per super. yard. The following plans have been passed:—Messrs. W. J. Scudamore & Sons, eighteen houses, Parkcroft-road, and nine in Newstead-road; Mr. J. Hughes, six houses, Braidwood-road; Mr. W. M. Proudfoot, shops, etc., Perry Vale; Mr. F. A. Walters, addition to Roman Catholic Church, Sydenham-road; Mr. J. Nicholls, six houses, Manwood-road; Mr. J. Watt, construction of 736 ft. of 12-in. pipe and concrete sewer in Bellingham-road, Catford. Mr. A. Roberts has lodged plans with the London County Council for the erection of additions to the factory in Hither Green-lane of Messrs. Newcombe's Tap-s-tre, Ltd.; as have also Messrs. Norfolk & Prior, for buildings at the corner of Bellingham and Thornsbeach roads.

Marylebone.—The sewer in a portion of Oxford-street is to be rebuilt at an estimated cost of 240*l.* The carriageway of Albert-road is to be recoated with macadam. The cost is put at 665*l.* It is probable that in the near future, owing to motor-'bus traffic, the question of laying down a more improved form of paving will be considered. Mr. A. C. Wheeler and Messrs. Smith & Son have lodged plans with the London County Council for the erection of a building in Lodge-road, Park-road, N.W., and for additions to No. 27, Grove End-road, respectively.

Poplar.—Tredegar-road Bridge is to be reconstructed at an approximate cost of 6,000*l.* Plans have been passed as follows:—Mr. William Bailey, rebuilding 305, High-street; Messrs. Holman & Goodrham, motor garage, Fairfield Works, Old Ford-road; Messrs. Holloway Brothers (London), Ltd., additions at St. David's Wharf, West Ferry-road; Messrs. Perry & Co. (Bow), Ltd., erection of Gilbert Bartholomew's Girls' Club, corner of Wrexham-road and Neve-street; Messrs. W. Johnson & Co., Ltd., extension to Borough Electricity Station, Violet-road.

Rickmansworth.—Plans submitted by Messrs. Clark Brothers have been approved for constructing a new street to be known as Dickinson-avenue, Croxley Green.

Southgate.—Plans have been passed for Mr. T. Morgan for the erection of eight houses in Greenwood-gardens; as have also plans for Mr. H. C. Keene, for four houses in The Rise, Palmer's Green.

Southwark.—A plan has been lodged with the London County Council by Messrs. Briant & Son, 200, Kennington Park-road, S.E., for sanction to the formation and laying-out of a street in continuation of Ambergate-street.

Stepney.—Mr. D. P. Hayworth has lodged plans with the London County Council for the erection of building upon the site of No. 264, Burdett-road.

Tottenham.—Tenders are to be invited for

LONDON COUNCILS—*continued on page 732.*

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xvii.; Auction Sales, xxii. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

DECEMBER 20. — **R.I.B.A. Competitions.**—All work for the Studentships and Prizes, 1913, must be delivered before 4 p.m. at 9, Conduit-street, W.

JANUARY 1, 1913.—**Belfast.**—DWELLING-HOUSES. —Premiums of 25*l.*, 15*l.*, and 10*l.* Particulars from the City Surveyor, Belfast (1*l.* 1s.).

JANUARY 1, 1913. — **Dublin.**—MUNICIPAL BUILDINGS.—Assessor, Mr. Albert E. Murray, A.R.H.A. Conditions from the City Treasurer, Dublin. Deposit, 2*l.* 2s.

JANUARY 31, 1913. — **Jamaica.** — MUNICIPAL BUILDINGS.—To cost 9,000*l.* Premium 100*l.* Particulars from Messrs. Young, Ltd., 60, Fenchurch-street, E.C. (2s.)

FEBRUARY 3, 1913.—**Harrogate.**—SCHOOL.—The Harrogate Education Committee invite designs for a Council school in Skipton-road. See advertisement in issue of November 1 for further particulars.

FEBRUARY 22, 1913. — **Jordanhill, Glasgow.**—PROPOSED TRAINING COLLEGE.—Limited to six firms, named in "Competition News," December 1, 1911, page 635.

MARCH 1, 1913. — **Rangoon.** — MUNICIPAL BUILDINGS.—The Committee of the Municipality of Rangoon invite designs for the new Municipal Buildings. Honoraria of 300*l.*, 200*l.*, and 100*l.* respectively for first, second, and third. See advertisement in August 2 and 30 for further particulars.

MARCH 1, 1913.—**Sofia.**—DESIGNS FOR A ROYAL PALACE AND LAW COURTS.—Particulars from the Commercial Intelligence Branch of the Board of Trade, Basinghall-street, E.C. (see page 173, August 9, and page 350, September 27).

MARCH 1, 1913. — **Winnipeg.** — CITY HALL.— Limited to British architects in Canada. Assessor, Mr. Leonard Stokes, F.R.I.B.A.

JULY 10, 1913.—TOWN PLANNING SCHEME.—Promoted by the Institution of Municipal and County Engineers. Premiums, 10 guineas, 7 guineas, and 5 guineas.

NO DATE. — **Dursley.** — WORKMEN'S DWELLINGS.—The Parochial Committee of the Dursley R.D.C. invite designs for about thirty workmen's dwellings. See advertisement in issue of October 25 for further particulars.

NO DATE.—**Folkestone.**—PROPOSED KURSAAL.— Cost not to exceed 20,000*l.* Premiums 100, 50, and 25 guineas. See "Competition News," page 542, November 8.

NO DATE.—**Motherwell.**—HIGH SCHOOL.—Dr. Burnet, assessor. Premiums 50*l.*, 30*l.*, and 20*l.*

* NO DATE. — **Worthing.** — NEW CHURCH.— Sketch plans are invited of a church to be erected in South Lancing, to cost, when completed, from 4,000*l.* to 5,000*l.* See advertisement in this issue for further particulars.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

DECEMBER 14.—**Bedwas.**—VILLA.—For the erection of one cottage villa at Bryngwyn-street, Bedwas. Plans and specification with Mr. Gomer L. Rees, architect and surveyor, Bedwas.

DECEMBER 16.—**Birkenhead.**—ROOF.—For construction of a roof at the abattoirs, New Chester-street. Plans and particulars seen, and form of tender, with specification and quantities, from Mr. C. Brownridge, M.Inst.C.E., Borough Engneer and Surveyor, Town Hall, Birkenhead, on deposit of 5s.

DECEMBER 16.—**Bridlington.**—PREMISES.—For pulling down and rebuilding premises, King-street and Chapel-street, Bridlington. Plans, etc., seen, and particulars, on deposit of 10s., from Mr. T. Beecroft-Atkinson, architect, 11, Trinity House-lane, Hull.

DECEMBER 16. — **Trowbridge.**—ALTERATIONS.— For alterations and repairs to the Conigre Infants' School, Trowbridge. Plans and specifications with Mr. J. G. Powell, County Surveyor, Trowbridge.

DECEMBER 17. — **Barnsley.** — HOUSES, ETC.— Erection of six houses, outbuildings, and boundary walls in Park-street, Barnsley. Plans and specifications seen, and quantities from Messrs. Crawshaw & Wilkinson, architects, 13, Regent-street, Barnsley.

DECEMBER 17.—**Bridlington.**—ALTERATIONS.— For makng alterations in the People's Palace buildings, Bridlington. Plans and specification with Mr. S. Dver and Mr. C. F. Johnson, joint architects, 29, Quay-road, Bridlington.

DECEMBER 17. — **Consett.** — REBUILDING.—For proposed rebuilding of Edinburgh House, Middle-street. Plans, specification, and conditions with Mr. J. J. Eltringham, Lic.R.I.B.A., architect and surveyor, Blackhill.

DECEMBER 17.—**Farnham.**—COTTAGES.—For the erection of five cottages at Darvill's-lane, Farnham. Plans and specifications seen, and forms of tender from the Council's Surveyor, Council Offices, South-street, Farnham.

DECEMBER 17.—**Leeds.**—BLOCKS.—Erection of sanitary blocks to section 6 at the Infirmary, and alterations to block 2 at the Workhouse, Beckett-street, Leeds. Architect, Mr. G. Fredk. Bowman, 5, Greek-street, Leeds.

DECEMBER 17. — **Payhembury.** — BUILDINGS.— For reconstructing the vicarage house and erecting new farm buildings. Plans and specifications with Messrs. E. H. Harbottle & Son, architects, County Chambers, Exeter.

DECEMBER 17.—**Ryehill.**—SANATORIUM, ETC.— For the erection of Sanatorium, comprising main and secondary blocks, superintendent's house, laundry, and engine-house, etc., at Ryehill, near Athenry, Co. Galway, and for a dispensary in Galway. Drawings and specifications with Mr. W. A. Scott, A.R.H.A., A.R.I.B.A., architect, 45, Mountjoy-square, Dublin. Quantities by Mr. James Mackey, 58, Dame-street, on deposit of 2*l.* 2s.

DECEMBER 18.—**Chester-le-Street.**—PAVILION.— For the erection of a new pavilion on the cubicle system at their Infectious Diseases Isolation Hospital, Chester-le-Street. Deposit of 3*l.* 3s. to Mr. John H. Mole, Surveyor, Chester-le-Street.

DECEMBER 18.—**Glasgow.**—ADDITIONS.—For proposed additional story to the Royal Infirmary. Drawings with the architect, Mr. James Miller, A.R.S.A., 15, Blythswood-square. Schedules from Mr. Peter Rintoul, Secretary, 212, West George-street, Glasgow, on deposit of 10s. 6d.

DECEMBER 18. — **Kendal.** — CONVERSION. — For converting the old brewery premises, Wildman-street, into a steam laundry. Plans and specifications with Mr. J. Walker, M.S.A., architect, Kendal.

DECEMBER 18. — **Wakefield.** — REMOVAL. — For removal of two temporary buildings from the Barnsley old Grammar School to Ferry Fryston and North Elmsall respectively. Plans and particulars with the Education Architect, County Hall, Wakefield.

DECEMBER 19.—**Chesterfield.**—HOUSE, ETC.— Erection of a new lock-up, court-house, and deputy chief constable's residence, etc., in Tapton-road and Malkin-street, Chesterfield. Drawings and specifications with the architects, Messrs. Hunter & Woodhouse, Belper. Quantities on deposit of 2*l.* 2s.

DECEMBER 19.—**Holywell.**—INFIRMARY.—Erection of a new Infirmary at Holywell, North Wales. Plans and specification seen, and quantities, with form of tender, from the architects, Messrs. John H. Davies & Sons, 14, Newgate-street, Chester. Deposit of 3*l.* 3s.

DECEMBER 19.—**London.**—STATION.—For building a relief station at Blackwall-lane, East Greenwich. Specification, plans, conditions, and form of tender with Mr. A. Roberts, F.R.I.B.A., 92, London-street, Greenwich. Deposit of 2*l.*

DECEMBER 19.—**Swansea.**—COTTAGE.—For erection of a lock-keeper's cottage at the eastern end of the Prince of Wales Dock. Plans and specifications with Mr. A. O. Schenk, M.Inst.C.E., Harbour Offices, Swansea.

DECEMBER 20.—**Belfast.**—SCHOOL.—For erection of a school in Tate's-avenue. Quantities from Mr. S. C. Hunter, Scottish Provident-buildings, on deposit of 2*l.* 2s. Plans and specifications with Mr. T. Houston, architect and civil engineer, Kingscourt, Wellington-place, Belfast.

DECEMBER 21.—**Braintree.**—LODGE, ETC.—For erection of a caretaker's lodge, dressing-boxes, etc., at new open-air swimming bath. Plans and specification with Mr. H. H. Nankivell, Surveyor's Office, Vestry Hall, Braintree.

DECEMBER 21. — **Carrickmacross.**—ADDITIONS, ETC.—For building additions to, and otherwise improving, the churches of Corduff and Corcreagh, Carrickmacross. Plans and specification with Mr. J. J. M'Donnell, architect, 27, Chichester-street, Belfast.

DECEMBER 21. — **Edinburgh.**—COTTAGES.—For erection of two blocks of four and three cottages and one cottage, with attics for attendants, at Dechmont Village, Uphall. Plans with Mr. J. Kyd, Clerk and Treasurer, Chambers, Castle-terrace, Edinburgh.

* DECEMBER 21. — **Wednesbury.**—INSTITUTE.— The Staffordshire Education Committee invite tenders for a County Metallurgical and Engineering Institute. See advertisement in this issue for further particulars.

DECEMBER 23.—**Abercynon.** — THEATRE.—Erection of an electric theatre at Abercynon, for the Abercynon Palace, Ltd. Plans and specification seen, and quantities, on deposit of 2*l.* 2s., from Messrs. Johnson & Richards, architects, Merthyr Tydfil.

DECEMBER 23.—**Bristol.**—OFFICE.—For the erection of Bristol, North, new Sorting-office. Drawings, specification, and conditions and form of contract with Mr. F. A. Huntley, H.M. Office of Works, Small-street, Bristol. Quantities and forms of tender, on deposit of 1*l.* 1s., from the Secretary, H.M. Office of Works, etc., Storey's-gate, London, S.W.

DECEMBER 23.—**Glasgow.**—WHARFING, ETC.—The Trustees of the Clyde Navigation invite tenders for the construction of 1,110 lin. ft. or thereby of timber wharfing in front of South Quay of Kingston Dock, and the erection of a goods shed, about 1,088 ft. long by 60 ft. wide, embracing excavator, mason and brick work, steel work, timber work, glazier work, slating, plumber work, painter work, and causewaying of quay and shed floor. Drawings seen, and specifications, quantities, and forms of tenders from the Trustee's Engineer, at 16, Robertson-street, Glasgow.

* DECEMBER 23. — **Liverpool.** — LABOUR EXCHANGE.—The Commissioners of H.M. Works and Public Buildings invite tenders for Labour Exchange at Canada Dock. See advertisement in this issue for further particulars.

DECEMBER 23. — **Prestwich.**—BUILDINGS.—For the erection of buildings and walls in connexion with the extensions of the Council's town's yard and stables. Plans, specifications, and quantities with the Surveyor, Mr. Sydney H. Morgan, A.M Inst.C.E. Deposit of 1*l.* 1s.

DECEMBER 30.—**Altrincham.**—SHELTER, ETC.— For erection of shelter and conveniences at the recreation ground, Broadheath. Plans seen, and specification and quantities from Mr. H. E. Brown, Surveyor, Town Hall, Altrincham.

* JANUARY 2, 1913.—**London, N.**—ADDITIONS.— The St. Pancras Guardians invite tenders for additional bedrooms for officers over east wing of front central block at Infirmary, Dartmouth Park-hill, N. See advertisement in this issue for further particulars.

* JANUARY 4.—**Ashford.**—SCHOOL.—The Kent Education Committee invite tenders for boys' Council school, to accommodate eighty extra scholars. See advertisement in this issue for further particulars.

JANUARY 9. — **Swansea.** — SHEDS.—For erection of one framed and braced steel double-storied extension of the grain shed at the Prince of Wales Dock, with sides and roof covered with galvanised corrugated sheeting; two framed and braced steel single-storied extensions of the transit shed at No. 1 Quay, King's Dock, with sides and roofs covered with galvanised corrugated sheeting. Forms of tender contract, specifications and conditions, and drawings, on deposit of 3*l.* 3s., from Mr. Talfourd Strick, Clerk, Harbour Offices, Swansea.

* JANUARY 13.—**Beckenham.**—SHELTERS, GREENHOUSE, ETC.—The Beckenham U.D.C invite tenders for two rustic thatched shelters, rustic fencing, and greenhouse at Kelsey Park. See advertisement in this issue for further particulars.

JANUARY 17.—**Childswickham.**—ALTERATIONS. —For altering and extending Childswickham Council School, near Broadway. Particulars from Mr. R. S. Phillips, architect, Shire Hall, Gloucester, on deposit of 2*l.* 2s.

* JANUARY 21. — **East Ham.** — SCHOOL.—The East Ham Education Committee invite tenders for erection of Brampton-road School, to accommodate 1,491 scholars. See advertisement in this issue for further particulars.

NO DATE. — **Newcastle.** — ALTERATIONS. — For alterations to schoolroom of Central Primitive Methodist Church, Northumberland-road, Newcastle. Names to Messrs. T. E. Davidson & Son, architects, 1, Eldon-square, Newcastle-on-Tyne.

NO DATE.—**Whitby.**—CONVENIENCE, ETC.—For the conversion of part of warehouse near the old wooden quay into a public convenience, dustbin, etc. Particulars from Mr. Thos. Keat Scott, Surveyor, Offices of U.D.C.

ENGINEERING, IRON, AND STEEL.

DECEMBER 17.—**Dewsbury.**—BOILERS.—For the erection of two water-tube boilers, superheaters brickwork, and mechanical stokers complete. Specification and details from Mr. R. H. Campion, Borough Electrical Engineer, Bradford-road, Dewsbury. Deposit of 1*l.* 1s.

DECEMBER 17.—**Ramsbottom.**—WORK.—For the erection of overhead electrical work necessary for about 3¼ miles of route. Drawings seen at the offices of the U.D.C. Specification and general conditions of contract on deposit of 5*l.* 5s.

ENGINEERING, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

DECEMBER 18.—**Caterham.**—ENGINE.—The Metropolitan Asylums Board invite tenders for the installation of a new steam-engine and mechanical appliances in kitchen at Caterham Asylum, Caterham, Surrey. Drawing and specification prepared by Mr. W. T. Hatch, M.Inst.C.E., M.I.Mech.E., Engineer-in-Chief. Drawing, conditions of contract, specification, and forms of tender at the Office of the Board, Embankment, London, E.C. Deposit of 1*l.*

DECEMBER 18.—**Clacton.**—WELL.—For the construction of a 9-in. bored deep well. Specification, general conditions, and tender form from the Engineer, Mr. Sydney Francis, A.M.I.M.E., Town Hall-buildings, Clacton-on-Sea. Deposit of 1*l.* 1s.

DECEMBER 18.—**Molesey.**—ALTERATIONS, ETC.—For alterations and improvements to the hot-water installations at Isolation Hospital, West Molesey. Specifications at the Surveyor's Office.

DECEMBER 23.—**Denbigh.**—BENCH.—For erection of retort bench and settings, for the Denbigh Gas and Coke Company, Ltd. Plans seen, and specification and forms of tender from Mr. W. Ewart Brock, Engineer and Secretary. Deposit of 1*l.* 1s.

DECEMBER 23.—**Haslemere.**—RESERVOIR.—For the construction of a reservoir to contain 400,000 gallons on Black Down, Largashall. Drawing and specification seen, and quantities and forms of tender from Messrs. R. B. Grantham & Son, 5, Little College-street, Westminster, S.W., on deposit of 3*l.* 3s.

DECEMBER 28.—**Ullapool.**—EXTENSIONS.—For the construction of timber and concrete extensions, etc., at Ullapool Pier, for the Pier Trustees. Plans and specification with Mr. G. Woulfe Brenan, M.Inst.C.E., Albany-street, Oban, and also the office of the Chief Surveyor to the Board of Agriculture and Fisheries, 122, George-street, Edinburgh, from both of whom quantities may be obtained on deposit of 1*l.*

DECEMBER 30.—**Southampton.**—BRIDGE.—For the reconstruction of the superstructure of Brockenhurst Bridge, consisting of two 20-ft. spans of steel decking. Plan and specification, general conditions with Mr. W. J. Taylor, County Surveyor, The Castle, Winchester. Deposit of 2*l.* 2s.

DECEMBER 30.—**Southampton.**—BRIDGE.—For the reconstruction of a small bridge, known as Fore Bridge. Plan and specification and general conditions with Mr. W. J. Taylor, County Surveyor, The Castle, Winchester. Deposit of 2*l.* 2s.

JANUARY 1, 1913.—**Belfast.**—CRANE.—The Belfast Harbour Commissioners invite tenders for the construction on the Alexandra Wharf, Belfast, of an electric derrick crane, capable of lifting 120 tons. Specification and drawing, with form of tender, from the Harbour Engineer, Mr. W. Redfern Kelly, M.Inst.C.E., Harbour Office, Belfast.

JANUARY 7.—**South Wales.**—RAILWAY.—The Great Western Railway invite tenders for the construction of a railway in South Wales, between Gwaun-cae-Gurwen and Cwmgorse, about 1½ miles in length. Plans and specification seen, and forms of tender and quantities at the office of the New Works Engineer, Paddington Station, London.

JANUARY 11.—**Stretford.**—BRIDGE.—For reconstructing in reinforced concrete the Longford Bridge, over the Bridgewater Canal, Chester-road, and contingent work. Drawings seen, and form of tender, with specification and particulars, from Mr. Ernest Worrall, the Council's Surveyor. Deposit of 3*l.* 3s.

NO DATE.—**Woodhouse.**—VENTILATION.—For the improvement of the ventilation at Woodhouse West Council School. Specifications from Mr. S. Abson, Education Offices, Woodhouse, Yorks.

FURNITURE, PAINTING, MATERIALS etc.

DECEMBER 14.—**Cardiff.**—TILE WORK.—For cement and tile work at Cardiff Workhouse. Specification from Mr. Arthur J. Harris, Clerk, Union Offices, Queen's-chambers, Cardiff.

DECEMBER 14.—**Halifax.**—LIMEWASHING.—For the limewashing of the slaughter-houses, etc. Specifications seen, and forms of tender from Mr. James Lord, M.Inst.C.E., Borough Engineer, Town Hall, Halifax, on deposit of 1*l.*

DECEMBER 16.—**Barnstaple.**—PAINTING.—For painting and colouring interior of the Wesleyan schools. Particulars from Mr. E. Y. Saunders, P.A.S.I., Borough Surveyor, The Strand, Barnstaple.

DECEMBER 17.—**Harrogate.**—CASTINGS, ETC.—For the supply of about 85 tons of 3-in. diameter cast-iron pipes and special castings. Specification and tender form with Mr. Arthur S. West, Waterworks Manager and Engineer.

✱ DECEMBER 17.—**Willesden.**—ANNUAL CONTRACTS.—The Willesden D.C. invite tenders for execution of works and supply of materials commencing April 1, 1913. See advertisement in this issue for further particulars.

DECEMBER 27.—**Hartlepool.**—BATHS, ETC.—For fixing of baths, slop sinks, etc., at the Workhouse. Mr. Geo. Kilvington, Clerk to the Guardians, Union Offices, Hart-road, West Hartlepool.

✱ JANUARY 2, 1913.—**Wandsworth.**—MATERIALS AND WORKS.—The Wandsworth B.C. invite tenders for supply of materials and execution of works from March 31 next, for one, two, or three years. See advertisement in this issue for further particulars.

✱ JANUARY 24.—**Croydon.**—SCHOOL FURNITURE.—The Croydon Education Committee invite tenders for supply of school furniture. See advertisement in this issue for further particulars.

✱ NO DATE.—**Bournemouth.**—FURNITURE AND FITTINGS.—The Bournemouth Education Committee invite tenders for furniture and fittings for the Science Laboratories at Municipal College. See advertisement in this issue for further particulars.

ROADS, SANITARY AND WATER WORKS.

DECEMBER 13.—**Manchester.**—ALTERATIONS.—For the execution of sanitary alterations at the following premises, viz.:—1 to 9, Boden-place; 1 to 7, Boden-street, Ardwick; 29 to 31, Paddock-street, Ardwick; 2 to 16, Heron-street; 4, Heron-place; and 5, Erskine-street, Hulme; 21 to 33, Richardson-street, and 55 and 57, Teignmouth-street, Collyhurst. Forms of tender, general conditions, and specifications from the Manager of the Drainage Department.

DECEMBER 14.—**Glasgow.**—MAINS.—For supplying about 1,550 tons of 36-in. cast-iron pipes and special castings required for a portion of one of the additional mains from Craigmaddie service reservoir to the city. Drawings seen, and specification and forms of tender from Mr. J. R. Sutherland, Water Engineer, 45, John-street, Glasgow.

DECEMBER 16.—**Birkenhead.**—PATHS, ETC.—For forming and draining the proposed paths, for providing and fixing new entrance gates, and for the erection of conveniences and shelters in the proposed recreation ground, Birkenhead Park. Plans and particulars seen, and forms of tender, with specifications and quantities, from Mr. C. Brownridge, M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Birkenhead, on deposit of 5s.

DECEMBER 16.—**Maidenhead.**—PAVING.—For kerbing, channelling, and paving High-street, Maidenhead. Plans and specification seen, and quantities and form of tender from the Borough Surveyor, Mr. Percy Johns, A.M.Inst.C.E., Guildhall, Maidenhead.

DECEMBER 16.—**Plymouth.**—ROADS.—For making-up and completing of Compton Park Villas-road, section 2, and Penrose Villas-road. Plans and specifications and conditions with Mr. James Paton, Borough Engineer, Municipal Offices, Plymouth.

DECEMBER 17.—**Harrogate.**—MAIN.—For laying about 2½ miles of water main, from Knaresborough to Goldsborough. Particulars from Mr. A. S. West, Waterworks Manager and Engineer.

DECEMBER 17.—**London.**—MATERIALS.—For supply of gravel, sand, flints, etc., for use in the parks and open spaces. Sample of flints required seen at the L.C.C. Parks Department, 11, Regent-street, S.W. Forms of tender from the Clerk of the London C.C., County Hall, Spring-gardens, S.W.

✱ DECEMBER 17.—**Willesden.**—ROAD-MAKING AND PAVING.—The Willesden D.C. invite tenders for road-making and paving works. See advertisement in this issue for further particulars.

DECEMBER 18.—**Guildford.**—DRAIN.—For the construction of about 972 yds. of 18-in. and 12-in. surface-water drain in Woking and Woodlands roads, Guildford, with necessary manholes, gullies, and connexions. Plans seen, and specification, quantities, and form of tender from Mr. C. G. Mason, A.M.Inst.C.E., Borough Engineer and Surveyor. Deposit of 2*l.* 2s.

DECEMBER 19.—**Gilfach Goch.**—SEWAGE.—For laying about 180 yds. of 12-in. and 360 yds. of 6-in. diameter stoneware pipe sewers at Gilfach Goch, and 85 yds. of 6-in. diameter stoneware pipe sewer at Miskin Village, Pontyclun. Plans and specification seen, and quantities, on deposit of 1*l.*, from Mr. Thomas Saunders, Surveyor's Office, School-street, Pontyclun, Glam.

DECEMBER 21.—**Coatbridge.**—WORKS.—For the construction of the following works in reinforced concrete, viz.: (1) Diversion and culverting of the Luggie Burn for a length of 750 lin. yds., or thereby; (2) storm-water overflow, detritus tanks, and measuring gauge; (3) clarification tanks; (4) channels, dosing chamber, troughs, and settling tanks. Also the following other works, viz.: (5) Sludge-driving beds; (6) 30-in. steel pipe for effluent, 272 lin. yds., or thereby; (7) bacteria beds. General conditions, specification, schedule, and form of tender from Messrs. Kyle, Dennison, & Laing, civil engineers, 174, West George-street, Glasgow. Deposit of 2*l.* 2s.

DECEMBER 23.—**Southampton.**—FOOTWAY.—For the formation of a gravelled footway with turf edging, together with the surface drainage in connexion therewith, on the Basingstoke and London main road at Hook. Plans, specification, and form of tender from Mr. W. J. Taylor, County Surveyor, The Castle, Winchester. Deposit of 1*l.* 1s.

DECEMBER 24.—**Kilrush.**—SEWAGE, ETC.—For the construction of sewers, tanks, engine-house, rising main, outfall pipe, and other works. Plans and specifications with the Engineer, Mr. P. H. M'Carthy, M.A., B.E., M.Inst.C.E.I., 39, Westmoreland-street, Dublin. Deposit of 3*l.*

DECEMBER 27.—**London.**—ROADS.—For making-up Manor-gardens, in the Urban District of Merton. Plans, sections, and specifications seen, and forms of tender, on deposit of 2*l.*, from Mr. G. Jerram, Surveyor, Council Offices, Merton.

DECEMBER 28.—**Exmouth.**—DRIVE.—For construction of new marine drive. Plans, sections, and details seen, and conditions, specifications, and quantities, on deposit of 1*l.* 1s., from Mr. Samuel Hutton, Engineer to the Council, Public Hall, Exmouth.

DECEMBER 30.—**Woking.**—SEWAGE.—For the construction of about 3 miles of 8-in. and 9-in. stoneware and cast-iron pipe sewers, and thirty-nine manholes at Hook Heath. Drawings, conditions of contract, specification, and quantities with Mr. G. J. Woodbridge, Engineer, Council Offices, Woking. Deposit of 5*l.*

DECEMBER 31.—**Leyton.**—SEWAGE.—For the reconstruction of existing sewers with new 9-in. stoneware pipes in Arundel-road, Borthwick-road, Broxbourne-road, Devonshire-road, Huddlestone-road, Pevensey-road, Ramsay-road, Trumpington-road, and Winchelsea-road. Plans seen, and specification, quantities, form of tender, and particulars from Mr. Ernest H. Essex, A.M.Inst.C.E., Town Hall, Leyton.

JANUARY 1, 1913.—**Llantrisant.**—ROADS.—For the completion of the new Ely Valley-road and branch roads, all 36 ft. in width. Plans and specification seen, and quantities and forms of tenders, on deposit of 5*l.*, from Messrs. Gomer S. Morgan & Thomas Saunders, engineers, School-street, Pontyclun, Glam.

JANUARY 2.—**Kirkcudbright.**—DRAINAGE.—For proposed drainage scheme for Creetown. Plans, sections, and specifications at the office of the County Sanitary Inspector, 13, King-street, Castle-Douglas. Quantities on deposit of 10s.

JANUARY 4.—**Dorchester.**—MATERIAL.—For the supply of road material. Forms of tender from the County Surveyor, County Offices, Dorchester.

JANUARY 13.—**Gloucester.**—ROADS.—For the supply of stone for use on main roads. Forms of tender from Mr. E. S. Sinnott, M.Inst.C.E., County Surveyor, Shire Hall, Gloucester.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*INSTRUCTOR OF HANDICRAFT (WOODWORK)	London County Council	100*l.* per annum	Dec. 21
*SURVEYOR	St. Bartholomew's Hospital	Not stated	Dec. 21
*DEPUTY BOROUGH ENGINEER AND SURVEYOR	Warrington Corporation	200*l.* per annum	Dec. 23

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*STONE MERCHANT'S STOCK, ETC.—On the Premises	Robson & Perrin	Dec. 17
*BLDR'S MATERIALS, PLANT, ETC., SOUTHWARK BRIDGE-RD., S.E.—On the Prems.	H. J. Bromley & Co.	Dec. 18

LONDON COUNCILS—*continued from page 729.*

making up a portion of South-grove and a road between Avenue-road and South-grove. The passageway at the rear of Nos. 743 to 757, High-road, is to be made up and paved.

Twickenham.—Plans and estimates by the Surveyor for making up Cole Park-road, Cole-road, Hill View-road, and a portion of Denton-road, have been approved. The respective estimated costs are: 5,117*l.*, 462*l.*, 821*l.*, 341*l.*, and 768*l.*, and tenders are to be invited for carrying out the work. Plans have been lodged by the London General Omnibus Company for alterations and additions to their motor garage in Cambridge-road.

West Ham.—The tender of Mr. J. T. Luton, 138, Romford-road, Stratford, has been accepted, at 697*l.*, for the erection of a new handicraft centre at Upton-lane School.

Westminster.—Repairs are to be carried out to the carriageways of Grosvenor-road (setts) and Haymarket (wood) at a total estimated cost of 213*l.* About 147 ft. of new 15-in. pipe-sewer is to be constructed, 3 ft. lower than the existing sewer, in Albany Court-yard (which is to be filled up), at an approximate cost of 160*l.* The consent of the London County Council has been obtained to the straightening of the southern side of Beak-street, between Regent-street and Warwick-street, and to the widening of such street at its junction with Regent-street. Plans have been lodged with the London County Council by Messrs. Thompson & Walford for additions to Albert Hall-mansions.

Willesden.—The Education Committee have been asked to prepare a scheme for the provision of shower baths at the Council schools.

Wimbledon.—Plans prepared by the Surveyor have been approved for making up Sherwood-road at an estimated cost of 144*l.*, and a portion of Lancaster-road at an approximate cost of 850*l.* Sanctions have been received from the Local Government Board to the borrowing of the following amounts for making up the streets mentioned:—Portion of Broadway-mews, 192*l.*; portion of Havana-road, 154*l.*; portion of Langholm-road, 1,450*l.*; Olive-road, 182*l.*; Strathmore-road, 406*l.* Plans have been passed for Mr. T. W. Moss for alterations at "Hillbrow," Murray-road: also for Messrs. A. Luff & Sons for the erection of a motor garage at The Drive. Mr. J. S. de Vulder has lodged plans for alterations to Nos. 45 and 46, Hartfield-road.

Woolwich. — Two hundred yards of the carriageway of Footscray-road is to be placed at the disposal of the Road Board for re-surfacing with ordinary macadam. Electricity mains are to be extended in various parts of the district at an estimated cost of 318*l.* The tender of Mr. J. W. Ellingham has been accepted, at 567*l.*, for the construction of a convenience at North Woolwich. Plans have been lodged with the London County Council by Mr. W. Pearman, 5, Leghorn-road, Plumstead, for additions in front of Nos. 124 to 130, Plumstead Common-road, as have also plans by Mr. J. O. Cook, 1, Eleanor-road, Woolwich, for the re-erection of the North Kent Brewery Tap public-house, Lakedale-road, Plumstead.

OBITUARY.

The Late J. T. Bressey.

Supplementing our remarks in our issue for November 29, p. 661, on the decease of Mr. John Thomas Bressey, we may add the following, taken from the last issue of the R.I.B.A. *Journal*:—Mr. Bressey "had practised in the City at Ethelburga House, Bishopsgate, for nearly fifty years (latterly in partnership with his son, Mr. C. H. Bressey, F.S.I.). During a period of forty-five years he acted as Surveyor to the Wanstead Local Board and its successor, the District Council, for which authorities he designed the Council Offices, Isolation Hospital, the sewerage system of the district, and other public works. He also held the appointment of architect to the Wanstead School Board during the whole term of that body's existence, carrying out a number of large elementary schools in Cann Hall-lane, Carey-road, Downsell-road, Trumpington-road, Cobbold-road, etc. The churches of Holy Trinity (Wanstead Slip), St. Gabriel (Walthamstow), and the Wesleyan Chapel (Wanstead) were of his design, as well as the spire of Christ Church, Wanstead. His firm was responsible for many domestic and commercial buildings in London and its suburbs, such as the Holborn Silk Mart, depôts for Messrs. Pickford & Co., factories at Bow and Poplar, and the development of several building estates. He was a Past-Master of the Coopers' Company, and took a deep interest in the growth and welfare of the Parish of Wanstead, in which nearly his whole life was spent."

PATENTS.

APPLICATIONS PUBLISHED.*

24,991 of 1911.—Thomas Edward Farrands: Derricks.

25,287 of 1911.—John Todd: Construction of chimney-pots, chimney-cowls, and ventilating terminals.

1,612 of 1912.—George Southern: Apparatus used for or in connexion with the spreading or distribution of tar or other liquids to roads or such like.

3,309 of 1912.—Masahide Hamabusa: Process for manufacturing light firebricks.

8,488 of 1912.—Otto Rechnitz: Lathing or plaster supports capable of being rolled up and the process for their manufacture.

9,114 of 1912.—Oswin Hansom: Water-heating apparatus.

10,038 of 1912.—Arthur Haywood: Window fastener.

10,088 of 1912.—Joseph Southall: Fall bars for cooking-ranges.

10,141 of 1912.—James McCulloch Ross: Means for completing and economising the combustion of fuel in stoves and the like.

12,153 of 1912.—Florimund Vereycken: Flushing cisterns.

13,759 of 1912.—Jens Peter Larsen: Locks.

13,789 of 1912.—Jean Ravaisson-Mollien: Flushing mechanism for water cisterns.

17,497 of 1912.—Henry Donald Hope: Glazing windows and the like and devices therefor.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

SOME RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

November 20.—By EDWIN FOX, BOUSFIELD, BURNETTS, & BADDELEY.

Mile End.—23 to 28, 29 to 34, Wilson-st., f.g. rents, 100*l.*, reversion in 81 yrs. £1,600
Tottenham.—3 to 15 (odd), Lawrence-rd., f.g. rents 20*l.*, reversion in 62 and 81 yrs. 410
Holloway.—512, Hornsey-rd. (s.), f., y.r. 70*l.* 950

By P. & G. GEEN.

Peckham.—95, Kirkwood-rd., f., w.r. 36*l.* 8s..... 295

By HENRY LANGSTON & CO.

Whitechapel.—Hessell-st., Morgan House, u.t. 70 yrs., gr. 14*l.*, w.r. 83*l.* 8s..... 220

By ROBINS, GORE, & MERCER.

Marylebone.—19, Upper Charlton-st. (s.), u.t. 17 yrs., g.r. 28*l.*, gross rental 122*l.* 225
Shepherd's Bush.—24, Davisville-rd., f., e.r. 32*l.* 330
Kentish Town.—260, Kentish Town-rd., u.t. 36 yrs., g.r. 6*l.*, w.r. 52*l.*..... 150

By F. C. SQUIRE & CO.

Sydenham.—Sydenham Hill-rd., Eliot Lodge and Oak Cottage, area 1 a. 2 r. 24 p., f., p. 2,735

By CHARLES SPARROW & SON.

Marylebone.—41, Harewood-av., u.t. 29 yrs., g.r. 6*l.*, y.r. 45*l.* 325
10, Paradise-st. (s.), u.t. 6 yrs., g.r. 8*l.*, y.r. 60*l.* 155

By DOUGLAS YOUNG & CO.

Peckham.—265 to 277 (odd), Southampton-st., f.g. rents, 53*l.* 16s. 6d., reversion in 19¾ yrs. 1,400
New Malden.—61, Acacia-gr., f., e.r. 48*l.* 530

By GEORGE TARN, BAINBRIDGE, & SON.

Whorlton, Durham.—Sledwich Estate, 375 acres, f. 12,300

By E. G. RIGHTON & SON.

Beoley, Worcester.—Clifford's Farm, 43 a. 2 r. 38 p., f..... 1,205

November 21.—By FRITH & CO.

Holloway.—28, Archway-rd. (s.), u.t. 75 yrs., g.r. 20*l.*, y.r. 70*l.* 410
Palmers Green.—35, Tottenhall-rd., u.t. 92 yrs., g.r. 6*l.* 10s., y.r. 28*l.* 150

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

Streatham.—24 and 26, Parklands-rd., f.g. rents 15*l.*, reversion in 95 yrs. £323
Tooting.—8, 9, 10, 18, and 19, Birchwood-rd., f.g. rents 44*l.* 10s., reversion in 95 yrs. 942

By HUMBERT & FLINT.

Whitstable, Kent.—Pasture land, 67 a. 2 r. 31 p., f. 1,660

By MAY & ROWDEN.

Regent-st.—8, Glasshouse-st., f.g.r. 50*l.*, reversion in 96 yrs. 1,105

By C. C. & T. MOORE.

Plaistow.—17 to 27 (odd), Dongola-rd., f.g.r. 24*l.*, reversion in 71 yrs. 430
1, Dongola-rd., f.g.r. 3*l.* 10s., reversion in 71 yrs. 60
Bow.—32, Addington-rd., u.t. 33 yrs., g.r. 6*l.*, w.r. 49*l.* 8s. 170

By NEWBON & SHEPHARDS.

Highgate.—50, High-st. (s.), f., y.r. 60*l.* 1,000
2, South-gr. (s.), f., w.r. 52*l.* 360
Kentish Town.—27, Spencer-rd., f., w.r. 40*l.* 6s. 300
6, Wesleyan-pl., f., y.r. 32*l.* 345
Hampstead-rd.—No. 215, f., y.r. 55*l.* 550
Camden Town.—13, Rochester-ter., etc., u.t. 31 yrs., g.r. 6*l.*, e.r. 52*l.* 375
Hampstead-rd.—16, Robert-st, and 7, Roberts-mews, u.t. 9 yrs., g.r. 13*l.*, y.r. 80*l.* 160
Bow. — Addington-rd., i.g. rents 18*l.*, u.t. 39 yrs., g.r. 7*l.* 10s. 120
Malmesbury-rd., i.g. rents 119*l.* 8s., u.t. 39 yrs., g.r. 39*l.* 15s. 960
Caxton-st., i.g. rents 124*l.* 10s., u.t. 39 yrs., g.r. 56*l.* 15s. 835

By RIDER & SONS.

Willesden.—23 to 29 (odd), Ravensworth-rd., f.g. rents 16*l.*, reversion in 85 yrs. 360

By WESTON & SONS.

Clapham.—4, Broadhinton-rd., u.t. 31 yrs., g.r. 4*l.* 10s., y.r. 30*l.* 175
2, Westbury-st., u.t. 52 yrs., g.r. 9*l.*, w.r. 54*l.* 12s. 160
Brixton.—51, Burton-rd., u.t. 23 yrs., g.r. 5*l.* 15s., y.r. 34*l.* 155
73, Treherne-rd., u.t. 51 yrs., g.r. 5*l.* 5s., y.r. 32*l.* 220
Drury-la.—16, Betterton-st., plot of land, f. ... 175

By POPE, SMITH, & ANTHONY.

Weston-under-Penyard, Hereford.—Wharton Farm, 202 acres, f. 5,550

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use o this information.

BRICKS, &c.

Per 1000 Alongside, in River.	£ s. d.
Best Stocks	1 14 0
Picked Stocks for Facings	2 10 0

Per 1000, Delivered at Railway Depôt.

	£ s. d.		£ s. d.
Flettons	1 13 0	Best Blue Pressed Staffordshire	3 15 0
Best Fareham Red	3 12 0	Do. Bullnose	4 0 0
Best Red Pressed Ruabon Facing	5 0 0	Best Stourbridge Fire Bricks	4 0 0
GLAZED BRICKS—			
Best White, Ivory, and Salt Glzd. Str'tch'rs	12 7 6	Double Headers One Side and two Ends	14 17 6
Headers	11 17 6		18 17 6
Quoins, Bullnose, and 4½ in. Flats	15 17 6	Two Sides and one End	19 17 6
D'ble Stretchers	17 17 6	Splays & Squints	17 7 6

Second Quality £1 10s. per 1000 less than best.

	s. d.	
Thames and Pit Sand	6 9	per yard, delivered.
Thames Ballast	5 6	" "
Best Portland Cement	36 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 13s. 6d. per yard delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly dpt.

STONE.

Per Ft. Cube.

	s. d.
BATH STONE — delivered on road waggons, Paddington Depôt	1 7½
Do. do. delivered on road waggons, Nine Elms Depôt	1 9
PORTLAND STONE (20 ft. average)—	
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 3
White Basebed, delivered on road waggons Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 4½

Per Ft. Cube, delivered at Railway Depôt.

	s. d.		s. d.
Ancaster in blocks	1 10	Closeburn Red Freestone	2 0
Beer in blocks	1 6		
Greenshill in blocks	1 10	Red Mansfield Freestone	2 4
Darley Dale in blocks	2 4	Talacre & Gwespyr Stone	2 4
Red Corsehill in blocks	2 3		

STONE (*Continued*).

YORK STONE—*Robin Hood Quality.*

	£	s.	d.
Per Ft. Cube, Delivered at Railway Depôt.			
Scappled random blocks		2	10
Per Ft. Super., Delivered at Railway Depôt.			
6 in. sawn two sides landings to sizes (under 40 ft. super.)		2	3
6 in. rubbed two sides ditto, ditto		2	6
3 in. sawn two sides slabs (random sizes)		0	11½
2 in. to 2½ in. sawn one side slabs (random sizes)		0	7
1½ in. to 2 in. ditto, ditto		0	6

HARD YORK—

	£	s.	d.
Per Ft. Cube, Delivered at Railway Depôt.			
Scappled random blocks		3	0
Per Ft. Super., Delivered at Railway Depôt.			
6 in. sawn two sides landing to sizes (under 40 ft. super.)		2	8
6 in. rubbed two sides ditto		3	0
3 in. sawn two sides slabs (random sizes)		1	2
2 in. self-faced random flags		0	5

SLATES.

Per 1000 of 1200 at Railway Depôt.

In. In.	£	s.	d.	In. In.	£	s.	d.
20×10 best blue Bangor	13	2	6	20×10 best Eur'ka unfading green	15	17	6
20×12 ditto	13	17	6	20×12 ditto	18	7	6
20×10 1st quality ditto	13	0	0	18×10 ditto	13	5	0
20×12 ditto	13	15	0	16×8 ditto	10	5	0
16×8 ditto	7	5	0	20×10 permanent green	11	12	6
22×10 best blue Portmadoc	12	12	6	18×10 ditto	9	12	6
16×8 ditto	6	12	6	16×8 ditto	6	12	6

TILES.

At Railway Depôt.

	s.	d.		s.	d.
Best plain red roofing (per 1000)	42	0	Best "Hartshill" brand, plain sand-faced (per 1000)	45	0
Hip and Valley (per doz.)	3	7	Do. pressed (per 1000)	42	6
Best Broseley (per 1000)	50	0	Do. Ornamental (per 1000)	47	6
Do. Ornamental (per 1000)	52	6	Hip (per doz.)	4	0
Hip and Valley (per doz.)	4	0	Valley (per doz.)	3	6
Best Ruabon red, brown, or brindled (Edw'ds) (per 1000)	57	6	Staffords. (Hanley) Reds or Brindled (per 1000)	42	6
Do. Ornamental (per 1000)	60	0	Hand-made sand-faced (per 1000)	45	0
Hip (per doz.)	4	0	Hip (per doz.)	4	0
Valley (per doz.)	3	0	Valley (per doz.)	3	6

WOOD.

BUILDING WOOD.	At per standard.					
	£	s.	d.		£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	14	0	0	...	15	10	0
Deals: best 3 by 9	13	10	0	...	14	10	0

WOOD (*Continued*).

BUILDING WOOD (*Continued*)—	At per standard.					
	£	s.	d.		£	s.	d.
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	10	0	...	12	10	0
Battens: best 2½ by 6 and 3 by 6	0	10	0		less than 7 in. and 8 in.		
Deals: seconds	1	0	0		less than best.		
Battens: seconds	0	10	0		»		
2 in. by in. and 2 in. by 6 in.	9	10	0	...	10	10	0
2 in. by 4½ in. and 2 in. by 5 in.	9	0	0	...	10	0	0
Foreign Sawn Boards—							
1 in. and 1½ in. by 7 in.	0	10	0		more than battens.		
½ in.	1	0	0		»		
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft.					
	5	0	0	...	5	10	0
Seconds	4	10	0	...	5	0	0
Small timber (8 in. to 10 in.)	3	17	6	...	4	0	0
Small timber (6 in. to 8 in.)	3	5	0	...	3	10	0
Swedish balks	2	12	6	...	3	0	0
Pitch-pine timber (30 ft. average)	5	5	0	...	6	0	0

JOINERS' WOOD.	At per standard.					
	£	s.	d.		£	s.	d.
White Sea: first yellow deals, 3 in. by 11 in.	24	10	0	...	25	10	0
3 in. by 9 in.	22	10	0	...	23	10	0
Battens, 2½ in. and 3 in. by 7 in.	17	0	0	...	18	0	0
Second yellow deals, 3in. by 11 in.	19	0	0	...	20	0	0
» » 3 in. by 9 in.	18	0	0	...	19	10	0
Battens, 2½ in. and 3in. by 7 in.	14	0	0	...	15	0	0
Third yellow deals, 3 in. by 11 in. and 9 in.	14	0	0	...	15	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	10	0	...	12	10	0
Petersburg: first yellow deals, 3 in. by 11 in.	21	10	0	...	22	10	0
Do. 3 in. by 9 in.	18	10	0	...	19	10	0
Battens	14	0	0	...	15	0	0
Second yellow deals, 3 in. by 11 in.	16	10	0	...	17	10	0
Do. 3 in. by 9 in.	15	0	0	...	16	0	0
Battens	11	10	0	...	12	10	0
Third yellow deals, 3in. by 11 in.	13	10	0	...	14	10	0
Do. 3 in. by 9 in.	13	0	0	...	14	0	0
Battens	10	10	0	...	11	0	0
White Sea and Petersburg—							
First white deals, 3 in. by 11 in.	15	0	0	...	16	0	0
» » 3 in. by 9 in.	14	0	0	...	14	10	0
Battens	11	10	0	...	12	10	0
Second white deals, 3in. by 11in.	14	0	0	...	15	0	0
» » 3 in. by 9 in.	13	0	0	...	14	0	0
Battens	10	10	0	...	11	0	0
Pitch-pine: deals	19	0	0	...	21	0	0
Under 2 in. thick extra	0	10	0	...	1	0	0
Yellow Pine—First, regular sizes	48	0	0		upwards.		
Oddments	32	0	0		»		
Seconds, regular sizes	33	0	0		»		
Oddments	28	0	0		»		
Kauri Pine—Planks per ft. cube.	0	4	6	...	0	6	0
Danzig and Stettin Oak Logs—							
Large, per ft. cube	0	3	0	...	0	3	9
Small » »	0	2	6	...	0	2	6
Wainscot Oak Logs, per ft. cube	0	6	6	...	0	8	0
Dry Wainscot Oak, per ft. super. as inch	0	0	10	...	0	1	0
½ in. do. do.	0	0	8½	...	—		

WOOD (*Continued*).

JOINERS' WOOD (*Continued*)—	£	s.	d.		£	s.	d.
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0	0	10	...	0	1	1
Selected, Figury, per ft. super. as inch	0	1	6	...	0	2	6
Dry Walnut, American, per ft. super. as inch	0	0	10	...	0	1	0
Teak, per load	18	0	0	...	22	0	0
American Whitewood planks, per ft. cube	0	5	0	...	0	6	0
Prepared Flooring, etc.—	Per square.						
1 in. by 7 in. yellow, planed and shot	0	13	6	...	0	17	0
1 in. by 7 in. yellow, planed and matched	0	14	0	...	0	18	0
1½ in. by 7 in. yellow, planed and matched	0	16	0	...	1	0	0
1 in. by 7 in. white, planed and shot	0	12	0	...	0	14	6
1 in. by 7 in. white, planed and matched	0	12	6	...	0	15	0
1½ in. by 7 in. white, planed and matched	0	15	0	...	0	16	6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0	11	0	...	0	13	6
1 in. by 7 in. » »	0	14	0	...	0	18	6
¾ in. by 7 in. white » »	0	10	0	...	0	11	0
1 in. by 7 in. » »	0	12	9	...	0	15	0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton.						
	£	s.	d.		£	s.	d.
Rolled Steel Joists, ordinary sections	8	10	0	...	9	10	0
Compound Girders, ordinary sections	10	0	0	...	11	0	0
Steel Compound Stanchions	11	10	0	...	12	10	0
Angles, Tees, and Channels, ordinary sections	10	0	0	...	11	0	0
Flitch Plates	10	0	0	...	11	0	0
Cast Iron Columns & Stanchions, including ordinary patterns	8	0	0	...	8	10	0

METALS.

	Per ton, in London.						
IRON—	£	s.	d.		£	s.	d.
Common Bars	9	0	0	...	9	10	0
Staffordshire Crown Bars, good merchant quality	9	5	0	...	9	15	0
Staffordshire "Marked Bars"	11	0	0	...	—		
Mild Steel Bars	9	5	0	...	9	15	0
Hoop Iron, basis price	10	0	0	...	—		
» » Galvanised	17	10	0	...	—		
(*And upwards, according to size and gauge.)							
Sheet Iron Black—							
Ordinary sizes to 20 g.	10	5	0	...	—		
» » 24 g.	11	5	0	...	—		
» » 26 g.	12	15	0	...	—		
Sheet Iron, Galvanised, flat, ordinary quality—							
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	10	0	...	—		
Ordinary sizes to 22 g. and 24 g.	16	0	0	...	—		
» » 26 g.	17	0	0	...	—		

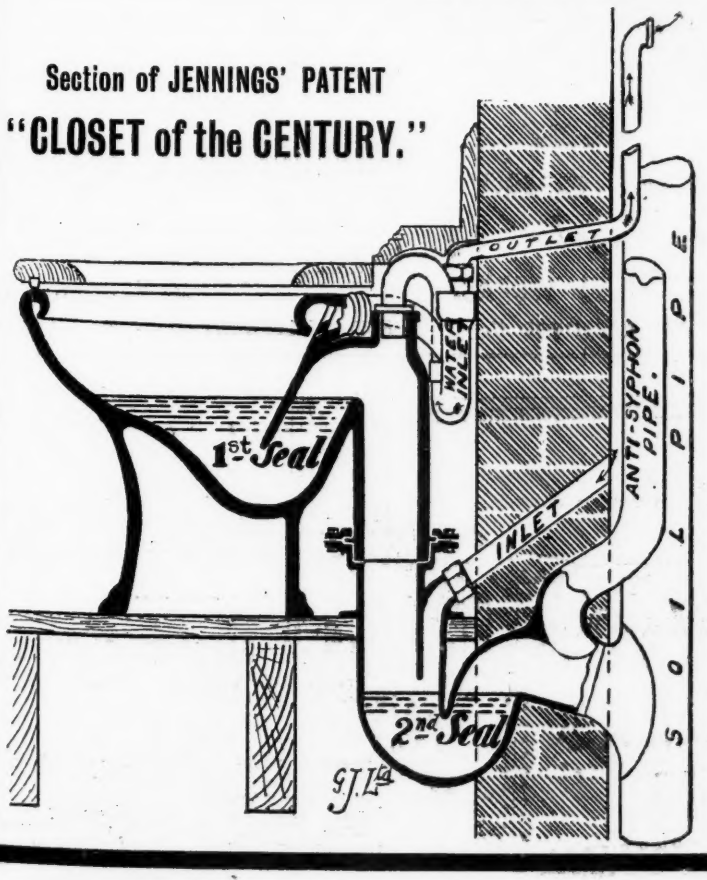
***In re* the Royal Commission Enquiry into the Retention or Abolition of the Intercepting Trap.**

H. P. Boulnois, Esq., M.I.C.E., in summarising the long discussion on this matter at the ROYAL SANITARY INSTITUTE, Nov. 12 and 19, 1912, EMPHATICALLY advocated "That the water-closet MUST be doubly sealed."

JENNINGS' Gold Medal "CLOSET OF THE CENTURY," with syphonic discharge, IS doubly sealed and secures absolute disconnection from the soil pipe or drain and ensures at all times CONTINUOUS FRESH AIR CIRCULATION BETWEEN THE TRAPS.

Section of JENNINGS' PATENT

"CLOSET of the CENTURY."



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NEW WEST-END SHOWROOMS

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(opposite Tube Station).

THE "CLOSET OF THE CENTURY"

can be seen in action at the above, or at the

Parke's Museum,

ROYAL SANITARY INSTITUTE,

90, Buckingham Palace Road, S.W.

METALS (*Continued*).

IRON (*Continued*)—	Per ton, in London. £	s.	d.		£	s.	d.
Sheet Iron, Galvanised, flat, best quality—							
Ordinary sizes to 20 g.	18	10	0	...		—	
" " 22 g. and 24 g.	19	0	0	...		—	
" " 26 g.	20	10	0	...		—	
Galvanised Corrugated Sheets—							
Ordinary sizes, 6ft. to 8ft. 20 g.	15	0	0	...		—	
" " 22 g. and 24 g.	15	5	0	...		—	
" " 26 g.	16	15	0	...		—	
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12	10	0	...		—	
Best Soft Steel Sheets, 2 g. & 24 g.	13	10	0	...		—	
" " " 26 g.	15	10	0	...		—	
Cut Nails, 3 in. to 6 in.	11	0	0	...	11	10	0
(Under 3 in., usual trade extras.)							

LEAD, &c.

Delivered in London.

	£	s.	d.		
LEAD—Sheet, English, 4lb. and up	21	17	6	...	—
Pipe in coils	22	7	6	...	—
Soil pipe	25	7	6	...	—
Compo pipe	25	7	6	...	—
ZINC—Sheet— In casks of 10 cwt.					
Vielle Montagne	33	15	0	...	—
Silesian	33	10	0	...	—
Zinc, in bundles, 1s. per cwt. extra.					
COPPER—					
Strong Sheet per lb.	0	1	1	...	—
Thin " "	0	1	2	...	—
Copper nails "	0	1	0	...	—
Copper wire "	0	1	0	...	—
BRASS—					
Strong Sheet "	0	1	0	...	—
Thin "	0	1	1	...	—
TIN—English Ingots "	0	2	3	...	—
SOLDER—Plumbers' "	0	0	11	...	—
Tinmen's "	0	1	2½	...	—
Blowpipe "	0	1	4½	..	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.*

Per Ft., Delivered.

15 oz. thirds	2½d.	26 oz. fourths	4d.
" fourths	2d.	32 oz. thirds	5½d.
21 oz. thirds	3½d.	" fourths	4⅝ d.
" fourths	3d.	Fluted Sheet, 15 oz.	3d.
26 oz. thirds	4½d.	" 21 oz.	4d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.*

Per Ft., Delivered.

⅛ Rolled plate	2½d.	Figured Rolled, Oxford Rolled, Oceanic, Arctic, Muffled, and Rolled Cathedral, white	3½d.
3/16 Rough rolled and rough cast plate	2½d.	Ditto, tinted	5d.
¼ Rough rolled and rough cast plate	3d.		

* Not less than two crates.

OILS, &c.		£	s.	d.
Raw Linseed Oil in pipes	per gallon	0	2	5
" " " in barrels	"	0	2	6
" " " in drums	"	0	2	7
Boiled " " in barrels	"	0	2	7
" " " in drums	"	0	2	10
Turpentine in barrels	"	0	2	5
" in drums	"	0	2	7
Genuine Ground English White Lead, (In not less than 5 cwt. lots)	per ton	30	5	0
Red Lead, Dry	"	26	12	6
Best Linseed Oil Putty	per cwt.	0	10	6
Stockholm Tar	per barrel	1	12	0

VARNISHES, &c.	Per gallon. £	s.	d.
Fine Pale Oak Varnish	0	8	0
Pale Copal Oak	0	10	6
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of Churches	0	14	6
Fine Elastic Carriage	0	12	0
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	10	0
Finest Pale Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Eggshell Flating Varnish	0	18	0
White Pale Enamel	1	4	0
Extra Pale Paper	0	12	0
Best Japan Gold Size	0	10	6
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	9
French and Brush Polish	0	10	6

TENDERS.

THE CHRISTMAS HOLIDAYS.—The week after next the *Builder* will be published on Tuesday, the 24th inst., and to ensure attention all communications for the Editor must reach our office by the *first post on Monday*, the 23rd.

* Denotes accepted. † Denotes *provisionally accepted*.

BRADFORD.—For erection of a children's home at Thackley. Mr. F. Holland, architect, 22, Manor-road, Bradford :—

Masons : W. North & Son, Idle, Bradford†	£1,100	0	0
Joiner : T. Patrick, Clayton, Bradford†	494	0	0
Plumbers : T. Obank & Sons, Thackley†	272	0	0
Plasterer : E. Mitchell, Idle, Bradford†	218	15	5
Slaters : Hill & Nelson, Bradford†	138	0	0
Painters : S. P. White, Bradford†	45	15	6

HENDON.—For the branch stores of the Hendon Co-operative Society, Ltd., Edgware-road, Hendon. Mr. Frank Bethell, architect and surveyor, Market-square-chambers, Enfield Town :—

		Weeks.
A. Porter	£2,093 0	23
Gough & Co.	2,061 2	22
A. Fairhead & Sons	2,057 0	16
W. Tout	2,050 0	24
Brand, Pettit, & Co	2,045 0	25
A. Monk, Edmonton*	1,997 0	18
W. Gibson & Co.	1,994 0	24

LONDON.—For erection of a school for physically defective children on the Elthorne-road site, Islington, for the London County Council :—

W. E. Blake, Ltd.	£5,501	0	0
A. E. Symes	5,491	0	0
Lole & Co.	5,475	0	0
McLaughlin & Harvey, Ltd.	5,377	0	0
C. P. Roberts & Co., Ltd.	5,377	0	0
L. H. & R. Roberts	5,259	0	0
W. Lawrence & Son	5,234	0	0
Patman & Fotheringham, Ltd.	5,233	0	0
Brand, Pettit, & Co.	5,219	0	0
McCormick & Sons, Ltd.	5,197	0	0
J. Chessum & Sons	5,182	17	6
E. Lawrance & Sons, Ltd.	5,107	0	0
J. Willmott & Sons	4,950	0	0

[Architect's estimate comparable with the tenders is £5,300.]

SOUTH CHINGFORD.—For proposed new public elementary school to accommodate 300 infants, for the Essex County Council. Mr. Frank Whitmore, County Architect, Chelmsford :—

Allen Bros.	£5,299	Foster & Son	£4,322
Glasscock & Sons	4,642	Strand Building Co.	4,237
Robinson, jun.	4,631	Clark & Sons	4,196
Brand, Pettit, & Co.	4,619	Davey & Armitage	4,185
J. & J. Dean	4,534	Mattock Bros., Wood Green*	4,117
W. Pavne	4,498		
Sharpin	4,345		

ORSETT.—For erection of a porter's lodge at the Hospital, Stifford, for the Orsett Joint Hospital Board. Mr. C. M. Shiner, A.R.I.B.A., architect, Adelphi, W.C. :—

Brown Bros.	£395	W. T. Green	£325
G. Brown	380	W. E. Walsham, Grays*	277
L. Lown	360		
J. J. Lawrence	337		

WIMBLEDON.—For the erection of a private house at Marryat-road, Wimbledon. Mr. A. E. Watson, architect, The Cottage, Puller-road, High Barnet :—

J. Styles & Son	£2,300	Peacock Bros.	£2,120
T. Holloway	2,269	C. P. Kearley	2,100
J. Carmichael	2,185	Pasterfield & English*	2,063
J. Burges & Sons	2,136		
C. Oldridge & Sons	2,132		

WOKINGHAM.—For picture palace. Mr. Cecil H. Perkins, A.R.I.B.A., architect, Church-road, Bracknell, Berks :—

Curtis	£1,411 0	Hughes	£1,023 0
Bell	1,250 0	Langman	987 15
Brown	1,115 0	Sewand, Wokingham*	974 0
Allnatt	1,040 0		
Payne	1,031 0		

[Architect's estimate, £1,000.]

Ham Hill Stone.
Doulting Stone.
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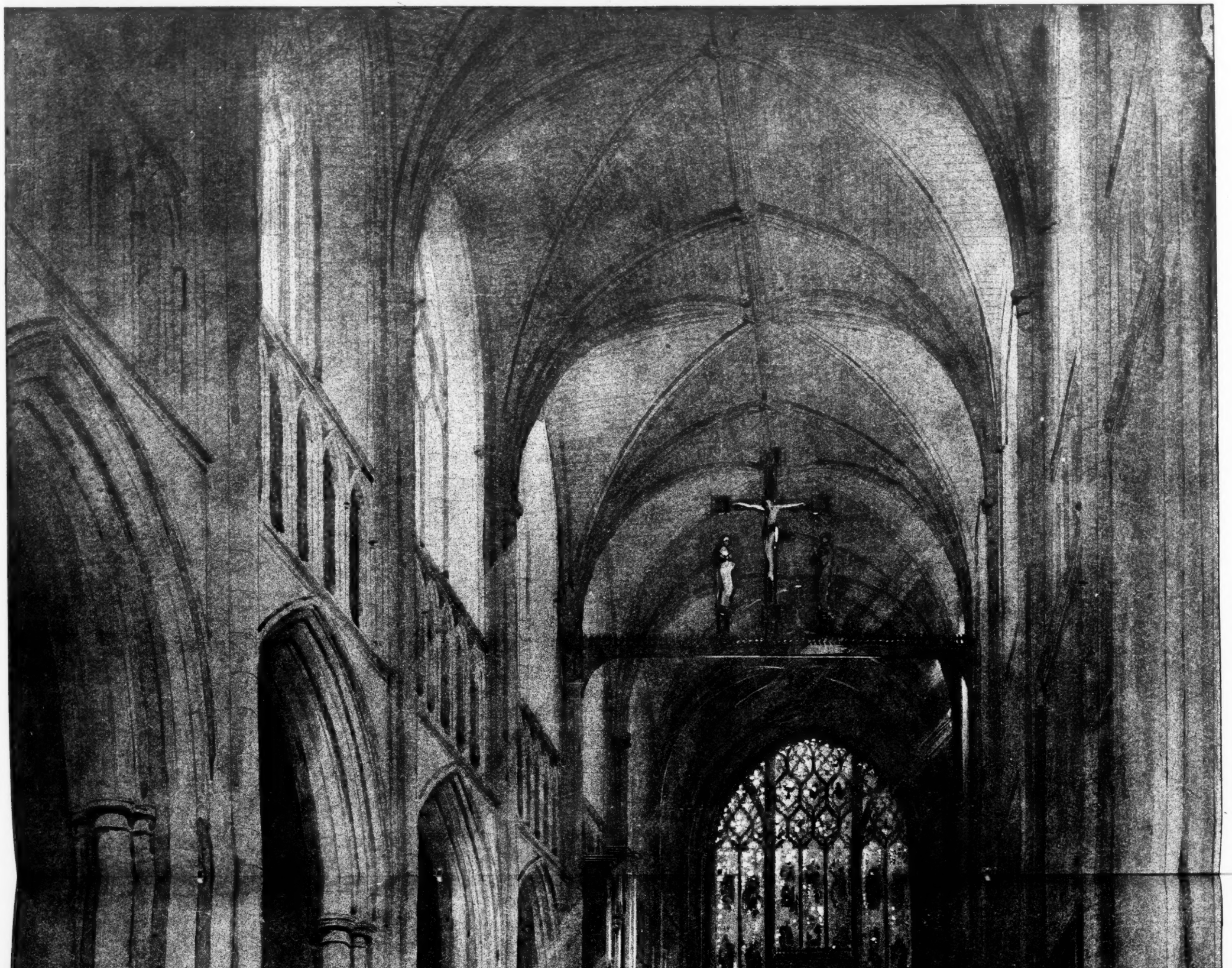
THE CHURCH OF THE ANNUNCIATION, OLD QUEBEC STREET, W: VIEW FROM S.E.

MR. WALTER TAPPER, F.R.I.B.A., ARCHITECT.

(Royal Academy Exhibition, 1912)



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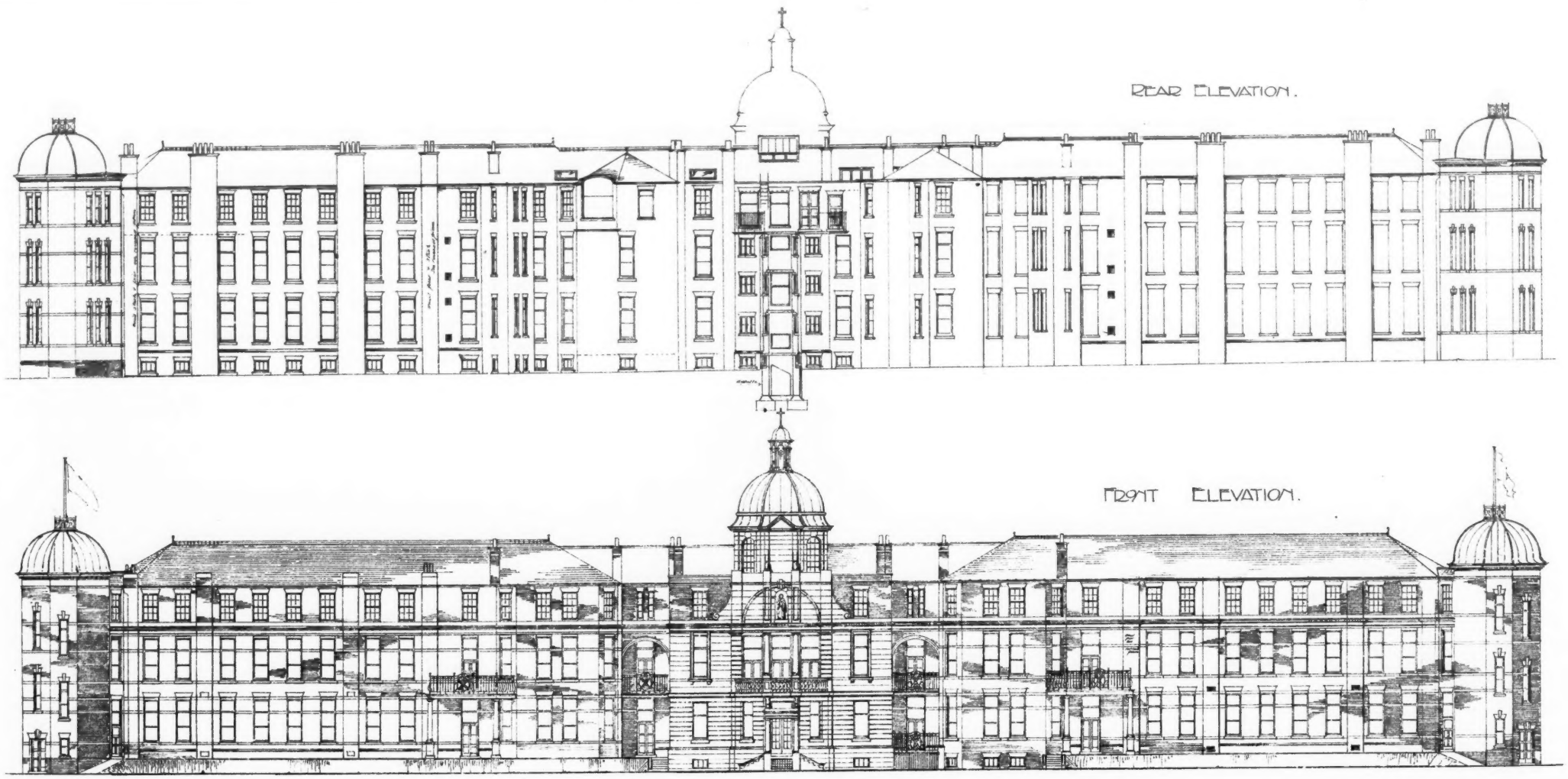
THE CHURCH OF THE ANNUNCIATION, OLD QUEBEC STREET, W: INTERIOR VIEW LOOKING E.

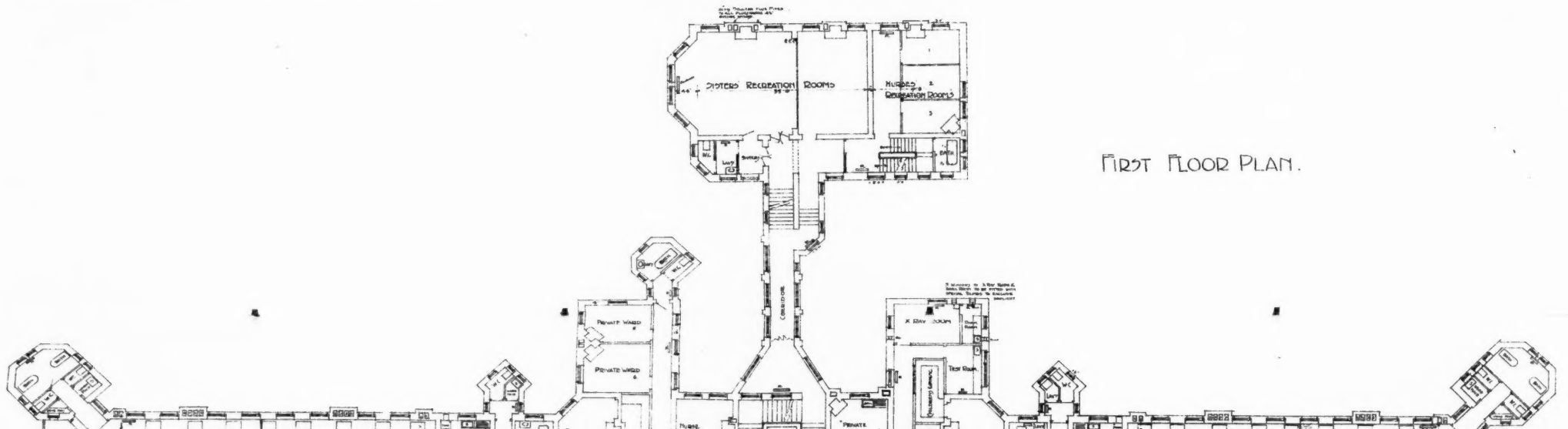
MR. WALTER TAPPER, F.R.I.B.A., ARCHITECT.

(Royal Academy Exhibition, 1912)

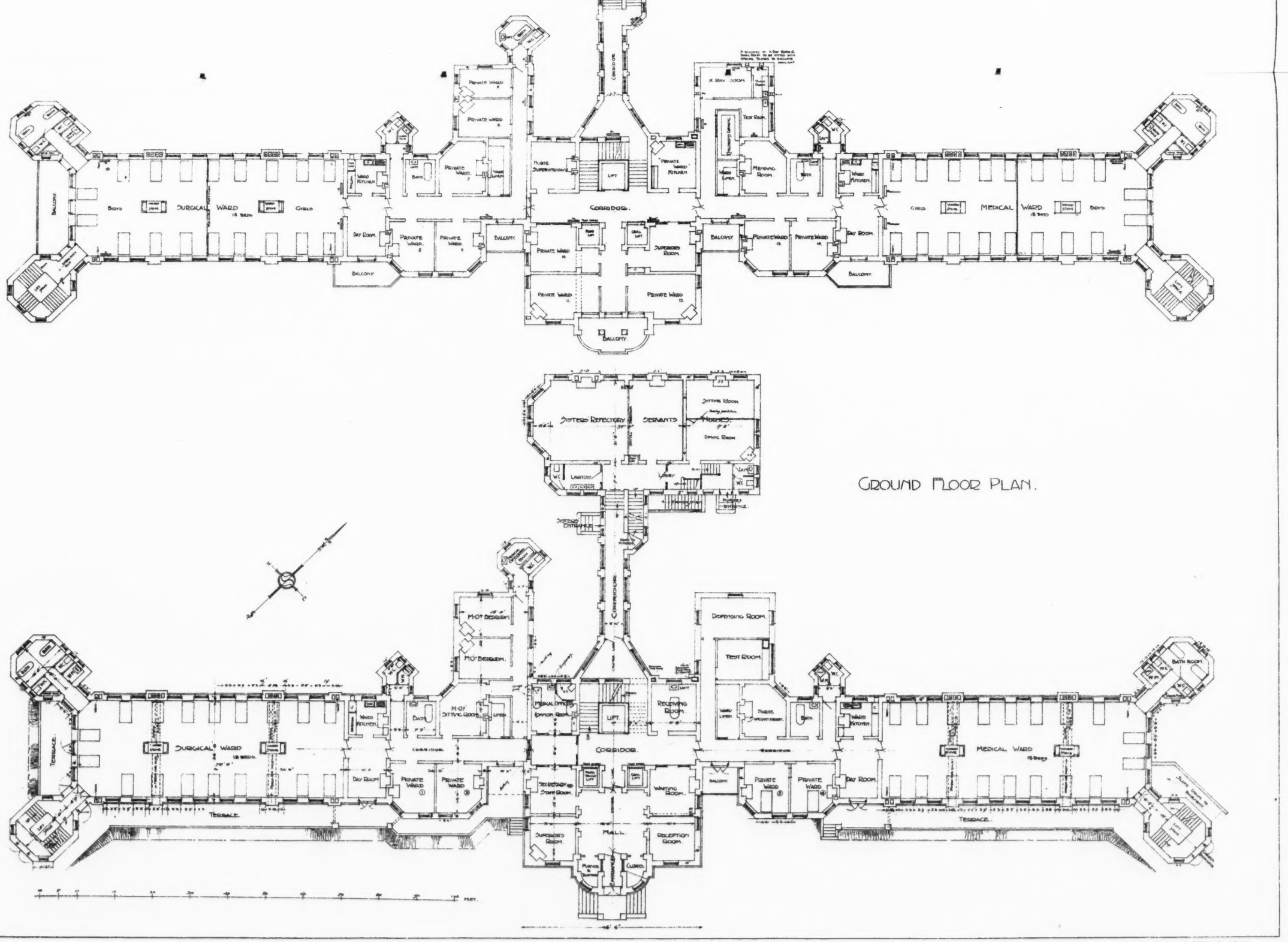


REAR ELEVATION.

FRONT ELEVATION.



FIRST FLOOR PLAN.



GROUND FLOOR PLAN.

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